

# THE MEDICAL JOURNAL OF AUSTRALIA

VOL. I.—24TH YEAR.

SYDNEY, SATURDAY, JANUARY 2, 1937.

No. 1.

## Table of Contents.

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ORIGINAL ARTICLES—	Page.	CORRESPONDENCE—	Page.
An Address, by T. A. PRICE .. . . .	1	"Emsol" .. . . .	37
Recent Progress in Anaesthesia, by S. V. MARSHALL, M.B., Ch.M., D.A. (R.C.P. & S.) .. . . .	7	An Explanation .. . . .	38
Chemical Warfare, by D. M. McWHAE, C.M.G., C.B.E., V.D., M.D., M.R.C.P. .. . . .	14	Tropical Australia .. . . .	38
Treatment of Civilian Gas Casualties, by LINDSAY MALE .. . . .	18	The Bordet-Wassermann Reaction and its Sig- nificance .. . . .	38
REPORTS OF CASES—		The Fifth Session of the Australasian Medical Congress (British Medical Association) .. . . .	38
Teak Dermatitis, by L. H. GENGE .. . . .	21	Uteroscopy .. . . .	39
REVIEWS—		Histidine in Gastric Ulcer .. . . .	39
The Medical Practitioner and the Law .. . . .	21	PROFESSOR D. A. WELSH PRIZE FUND .. . . .	39
Progress in Urology .. . . .	22	THE STAWELL MEMORIAL FUND .. . . .	39
LEADING ARTICLES—		A MEMORIAL TO THE LATE JOHN SMITH PURDY .. . . .	39
The New Hospital Act in Queensland .. . . .	23	OBITUARY—	
CURRENT COMMENT—		Robert Sewers Berry .. . . .	39
The Prevention of Puerperal Sepsis .. . . .	25	Samuel Harry Harris .. . . .	39
ABSTRACTS FROM CURRENT MEDICAL LITERATURE—		William Seldon .. . . .	39
Pædiatrics .. . . .	26	BOOKS RECEIVED .. . . .	40
Orthopædic Surgery .. . . .	26	DIARY FOR THE MONTH .. . . .	40
BRITISH MEDICAL ASSOCIATION NEWS—		MEDICAL APPOINTMENTS .. . . .	40
Annual Meeting .. . . .	28	MEDICAL APPOINTMENTS VACANT, ETC. .. . . .	40
Nominations and Elections .. . . .	35	MEDICAL APPOINTMENTS: IMPORTANT NOTICE .. . . .	40
MEDICAL PRACTICE—		EDITORIAL NOTICES .. . . .	40
The Adelaide Hospital Radiotherapy Clinic .. . . .	35		
CONGRESS NOTES—			
Australasian Medical Congress (British Medical Association) .. . . .	36		

### An Address.<sup>1</sup>

By T. A. PRICE,

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Medical Association.*

WE are living in one of the most interesting ages of man's history, a time of great changes, of great difficulties, of wonderful possibilities and of terrible dangers. In no sphere have the changes been more astonishing and the difficulties greater than in the practice of medicine. Mankind has awakened from the sleep of the Middle Ages to an era of frenzied activity, and the wise direction of these activities is as difficult as it is important.

<sup>1</sup> Read at the annual meeting of the Queensland Branch of the British Medical Association on December 11, 1936.

The task you have given me is difficult. It may be too difficult. It will be too difficult unless an adequate number of our members are fired with the desire to do their share in creating for all Queenslanders a worth-while medical service. This will not come about by making any man your president, by adopting any policy, by passing resolutions, or by any publicity campaign. A worth-while medical service for Queensland, if it does come about, must be created by the medical men of Queensland themselves, and by their patients. Governments, ministers of health, under-secretaries, directors-general of health, the much-vaunted Press and the British Medical Association are incidental—mere machinery. If the people really want a worth-while medical service, and if they are fully persuaded as to what form this service should take, then there will be no insurmountable difficulty. The machinery must deliver the goods or be scrapped. It is our job

to show the people something of what a medical service can do.

There will be a lot of hard work, and it will be slow—all big things are slow, even earthquakes, for they are only the final stages of a very slow process. If Queensland has a good medical service in working order within ten years it will have done very well indeed. The first thing to decide is: What do we want? Why change the practice of the profession of the past fifty years or so? Why? Because big changes are taking place in health work in Queensland. It is true that the Medical School is under way. This is important; but the really important matter is the steady growth of centralized institutionalism in our midst. This attempt to bring into being a new form of the practice of medicine may have more influence on the future of medicine in Queensland than the Medical School will have. It may determine the future of the Medical School more than the Medical School will determine the future of medicine. These changes are taking place because "the present system of private practice does not bring the necessary medical attention within the reach of the great proportion of the people in a manner that is satisfactory".<sup>(1)</sup> Why? Because, in the first place, it is too expensive, and, in the second place, there is so much specialization today that we need efficient organization to secure for the general practitioner the specialized help that he requires to complete a good medical service for his patients.

The industrial revolution of the West that has accompanied the great increase in the knowledge of the material universe, has brought about very great changes in the life and habits of the people. Progress is often spoken of in terms of immense bridges, great railways, multitudes of motor cars, universal picture shows, wireless, aeroplanes, "Frigidaire" and *cetera*. But these things are not necessarily indicative of progress. It is not progress merely to travel more quickly from one place to another; it is what you do when you get there that matters. An aeroplane may be used to save the life of a sick man—it may also be used to blow women and children to pieces. Progress is possible only in the spiritual field, and the only progress that we can see in modern times is the greater opportunity for more men to develop towards those higher peaks of character and understanding that have already been attained by the real leaders of mankind in the past. These heights will never be surpassed, but more men may have the opportunity to attain to them.

Modern industrial developments make possible the creation of a higher civilization. This can come about only if more humans can and do reach these higher peaks of personality. Hitherto few indeed have attained. How can medical practice today be developed to take its part in such a programme?

What are the aims of medicine? From time immemorial the aim of medicine has been concentrated on the cure of the sick. For a century or

more there has gradually been developed the prevention of disease. Lately, for the past ten or twenty years, there has taken shape what may be called constructive medicine, which aims at the fullest development of the physical, mental and spiritual potentiality in each individual.

How are we to attain these aims? What has happened in industry? America, in particular, has developed the modern organization of industry on the lines of mass production. This development has spread to many lands; it is being definitely pushed in Russia. America and Russia are also developing a medical service that is revolutionary in its relation to the past—centralized institutionalism, a branch of mass production.

The chief product of a factory is not the motor car, the sewing machine or the tin of jam that it vomits forth. The chief product is the factory worker. What sort of man do factories turn out, especially in the big industries?

First of all, there are the Henry Fords, the Lord Nuffields, the dictators—able, intelligent men whose word means industrial life or death to thousands. Then there are a small percentage of intelligent administrators who carry out the will of these dictators. Lastly, there are the ordinary workers. Of all these ordinary workers, 10% are highly skilled men who make the machines that do the work. Of the workers, 90% attend to the machines. Their work, even with short hours, is monotonous, needing close attention but little intelligence, and the result to this 90% is disastrous, the more so because many of the workers are satisfied.

This is not the time to discuss the future development of modern industry, though it has a strong medical side. Modern industry is here, and few would advocate going back to the pre-industrial age. But men are now thinking that mass production must be superseded by industrial methods that will produce in the workers finer characters—more purposeful, more intelligent—that is, render them better and happier men; and, as regards the material output, that the manufactured articles be better made, more beautiful, less stereotyped.

#### Effect of these Changes on Medical Practice.

These fundamental changes that have revolutionized industry in general have had their effect on medical practice.

The increase in scientific knowledge and the fearless questioning of accepted views have led to astonishing changes in the diagnosis and treatment of disease. These changes have increased knowledge and cleared up many mysteries. It is true that they have necessitated much specialization.

Although the outlook on medicine is clearer than ever it was for the general practitioner, and is daily becoming still clearer, no single mind can master the whole field of medicine. Hence there is much specialization, both in the diagnosis and treatment of disease. Not only are diagnosis and treatment complicated; they are extremely costly. Organiza-

tion is therefore essential from the point of view of finance and in order to make available diagnostic aids and treatment.

Professor Cabot, of Harvard University, says:

Our patients cannot afford the expense of what we should do if we gave our cases a thorough study and treatment in line with the best that is known today. It costs too much to be sick, to become parents of a child, to meet the strains of an average man's life.

A worth-while medical service today is very complicated and costly. There are specialists in spheres of preventive, curative and constructive medicine. Not only are human beings divided up according to their sex, their age and their sickness, and into various systems—circulatory, respiratory, renal *et cetera*—but there are numerous ancillary services which are sometimes required for accurate diagnosis and efficient treatment. It is obviously impossible for one man—the general practitioner—to attain all this knowledge and carry out all this treatment.

It is a simple matter to divide medicine into various specialties, but the patient remains an individual and cannot become a disease with a man attached to it. Whether he wants to or not, he remains an individual who is ill. This difficulty of reconciling the splitting up of the practice of medicine into various departments with the treatment of patients who cannot help remaining individuals, has not yet been satisfactorily solved in practice, though many systems have been tried and many suggestions have been made.

The general practitioner has the obvious advantage of treating the patient as a whole, of being the synthetic element from the ordinary scientific standpoint, and he has the immeasurable advantage of being acquainted with the most important elements in the patient, that is, those elements that cannot be investigated by ordinary science and that frequently play a predominant part in the causation and treatment of disease.

There is one specialty that is more important and that requires as much, if not more, intelligence, greater patience and a higher character than many of the narrower spheres of medical practice. That specialty is the intimate study of the patient as a human being, as an individual whose past must be known, whose present must be studied, and whose future must be considered, whose social, industrial, economic, family and personal sides must all be known and weighed; and that specialist is the efficient general practitioner.

Some people have a very wrong idea as to the importance and the standing of the general practitioner. He is too often regarded as somebody inferior to the specialist, or as a representative of lower ranks of the profession, while the specialist is supposed to represent the higher. It is not in the interest of medicine, and it certainly is not in the interest of the patients, that the family doctor should be abolished or looked upon as an inferior being.

#### Group Practice.

Since the old-time general practitioner cannot give a complete medical service, it is obvious that the patient must have the help of whatever specialists his condition requires, and group practice is one solution that America has tried. In 1887 the Mayos started this type of medical practice, and this venture has grown into the famous Mayo Clinic of today, with a staff of several hundred medical men. There are (1935), according to Hugh Cabot, of the Mayo Clinic, 150 such groups today. In general, they undertake the general practice of medicine and a good many include dentistry. The staffs are generally on a salary basis, but divided into owners and non-owners. Lay business managers are largely employed, also non-medical personnel for laboratory and allied work.

Since these groups offer general medical care, their organization is generally based upon providing more physicians skilled in general practice than in the special fields. The patient is first seen by the general physician, who calls in what special advice he requires. In this way the pattern that has proved sound hitherto in medical practice is, to a considerable extent, retained.

One of the questions most commonly raised in regard to the ultimate value and success of group practice concerns itself with the extent to which the personal relation between patient and physician will be lost. Men who have been engaged in this type of practice do not believe that this is the necessary result. The extent to which this personal relation between doctor and patient is lost depends almost entirely upon the personnel of the group, and very little on the type of organization. [Exactly as it depends upon the personality of the individual general practitioner.]

It is well to remember that in a great deal of medical practice today the personal relation has dropped into the background. Many patients today consult doctors without any intention of consulting them again. The patient is less impressed with the idea that a general practitioner can wisely guide him through the intricacies of the modern management of disease.<sup>(2)</sup>

This is perhaps the necessary result of a transitional period, but some blame is also to be laid at the door of the general practitioner and the patient. It does not mean that this personal relationship between doctor and patient is unimportant and cannot once again be emphasized.

The successful practice of medicine today may require team work. Cooperation certainly is essential. Closed teams can be successful according to the personality of their members, specially of their leaders. But, generally speaking, the open team, based on the general practitioner, with freedom of choice of specialist by the general practitioner, to correspond to freedom of choice of general practitioner by the patient, should give the best results. The Department of Health can help by encouraging the organization of team work in the different centres and suburbs.

H. Cabot (Mayo Clinic) writes:<sup>(3)</sup>

The set-up of group-practice, fashioned round the general practitioner, is the answer to the perplexing question agitating the general practitioner and the specialist. The

specialists are in the hands of the general practitioners. This method of integration between the general practitioner (the good trusted guide, counsellor and friend of the patient) and the specialist, who piles modern medical knowledge and skill in a superior way, in the interests of the patient, is the type of collaboration which this new era, looking into the future, needs.

It is seen that in America the need for the retention of the general practitioner is making itself felt. In other words, group practice will be successful only in so far as it is built on the general practitioner.

*Centralized and Specialized Institutionalism.*

On the other hand, there has developed in America and in Continental Europe a movement to centralize all health activities in one large institution, where specialists in every department take charge of the various patients according to their ailments, and the general practitioner does not come into the picture. Large out-patient departments are attached to each specialty. Almoners follow the patients to their homes. The aim is a complete service of specialists. As Mr. Hanlon, the Queensland Minister for Health, says (I quote from the Brisbane *Telegraph* report of his speech):

Today is the day of specialization, and gradually the medical profession is breaking up into specialized groups. The ordinary medical practitioner will soon be only a glorified commissionaire, directing his patients to the best services available.

These large specialized hospitals reach enormous dimensions. Los Angeles Hospital has a normal capacity for 2,500 patients, an emergency capacity for 3,500 patients, 3,000 employees; garages for 250 physicians' motor cars, 10 ambulances, 22 floors. The New York Medical Centre is even larger, and boasts of being the "largest in the world".

Specialization has run riot in America. The latest figures for specialization among recent graduates range from 4-6% at Harvard University College to 75% at Johns Hopkins University Medical School. These raw graduates go straight into special departments. A leading Melbourne physician, while in America recently, saw the following case in one of the famous and largest clinics. The patient was admitted to a heart hospital under Dr. X., who treated the auricular fibrillation without success, ignoring fairly definite thyreotoxic symptoms. The patient died, and the *post mortem* examination showed that the thyreoid was that of typical Graves's disease. Another case was one of definite myxoedema in the kidney department of an American hospital; the patient was being treated for chronic parenchymatous nephritis. This patient improved at once, and the condition cleared up completely after thyroxin injection.

One could multiply cases with ease, but I have said enough, I think, to stress the fact that the American example of allowing men, on graduation, to become residents in a special department before they have had general training, must be avoided at all costs.

Hugh Cabot, of the Mayo Clinic, writes, in "The Doctor's Bill", that it is impossible for the general practitioner today to get into close touch with

patients. In Detroit there are 58% of medical practitioners who are specialists, in Philadelphia 65%. In large cities general practitioners have difficulty in getting a practice because of the floating population. Cabot asserts that the relatively recent graduate equipped to use diagnostic methods and with hospital experience is a safer adviser than the general practitioner of sixty or seventy years of age, who has not kept himself abreast of the times. A rather unfair comparison. But then he naively admits that "the advantage of the senior general practitioner today lies largely in his extended knowledge of those considerable regions of human behaviour which have not yet come accurately within the view of science". He questions the importance of the free choice of doctor, and denies that it is possible for the general practitioner today to get close to his patients. Then, strange to relate, he writes:<sup>(3)</sup>

Specialization should not be undertaken without a broad basis of hospital experience, and a good case can be made for the view that a period of experience in the general practice of medicine for something like two years is much to be desired. Special training will occupy at least three years more under excellent conditions, which include hospital affiliation, which amounts to apprenticeship to experts.

How is it possible to get general practitioner's experience if there is no general practice? He also adds, speaking of group practice:

The outstanding importance of grouping together of physicians representing different fields of medicine has been its value as an experiment in widening the sphere of the individual and still retaining the essential characteristics of private practice.

If these characteristics are not essential, why retain them? I have tried hard to find out what case could be made out for huge centralized institutions based on specialization, as against a medical service based on general practice, that is, general practitioners specially trained for general work and using to the full all specialist and institutional aid really required. I have been unable to discover a good defence of the system; and extreme specialization is on the defensive today. In the first place, the advocates of these extremely centralized, specialistic institutions have recently altered their opinion about the optimum size of these hospitals. The official organ of the International Hospital Association of 1933, recording the Third Congress of International Hospital Associations held in Belgium in June to July, 1933, reports the conclusion:<sup>(4)</sup>

From the point of view of administration the optimum size is the hospital of about 600 beds.

Professor Hoffman, Chief of the Health Department, Berlin, says:<sup>(5)</sup>

In hospital construction one must depart finally from the erection of large, unwieldy hospitals.

Sir James Barrett, past President of the British Medical Association, says, when answering an inquiry about the optimum size of hospitals:

Many of the senior American surgeons thought 250 beds the optimum size for a hospital. They know, of course, the limitations of very large hospitals, such as Bellevue,

New York, which contains, I am told, 4,000 beds. Two medical administrators of Canadian hospitals were quite specific: not more than 300 beds, and then only if built vertically, and each floor devoted to one purpose, and largely self-contained.

King Edward Hospital Fund, London, in a lengthy analysis of costs, shows that the larger the hospital, the greater the cost per bed. In one general hospital in London, of more than 600 beds, counting staff, five persons are employed for every three patients.

Sidney Lamb, General Secretary of the Mersey-side Hospitals Council, Liverpool, after a tour of inspection of American hospitals, states that the average cost (of in-patients) in general teaching hospitals in the United States of America is £6 a week; other estimates are as high as £8 15s. per week.

Those who control centralized specialist institutions appear to have lost faith in large hospitals.

Dr. Albert, of Czechoslovakia, has recently put into being the "latest" centralized health centre, which is the result of his own large experience and of a special visit to America to study these institutions, the Bata House of Health.

In the official organ of the International Hospital Association of April, 1936, there is a description of the Bata health centre in Zlin, Czechoslovakia, under the leadership of Dr. Albert (the chief physician). Here a very earnest attempt is being made to centralize and to coordinate all the health activities of the district in one institution. The aim, through this institution, is to render all possible continuous help for each individual, commencing before birth, continuing during birth, embracing toddlers and school children right up to the point when the person takes his or her place as an industrial worker, and finally ending in the welfare work for the aged and infirm.

The Bata House of Health has three wings; the largest consists of nursing units, two in each story: sixteen nursing units with 520 beds. A similar wing (parallel to the main wing) is for diagnostic and curative treatment. The connecting link between the two is chiefly for vertical communication. The whole of the first floor is reserved for out-patients. Here are: (i) out-patient departments, (ii) Bata Works Health Administration, (iii) secretariat of the sick insurance societies, (iv) mother and child welfare centre, (v) red cross branch. The chief out-patient department is organized to deal with a thousand patients a day. Such an enormous number requires special preparation, large waiting rooms and a sufficient number of examining cubicles and accelerated action.

It is also necessary to direct the large streams of out-patients into the proper channels in order to regulate the automatic activities of the out-patient departments. In order to facilitate matters, temperatures are taken and urine is examined before the patient is seen by the examining doctor. To avoid back-flow, the traffic is in one direction only. The Bata Works Health Department is used for the regular examination of all the Bata Works employees at set periods.

It is enlightening to see how those who have had most to do with specialized institutionalism are finding out that patients are individuals and must be treated as such. Dr. Ham Frey, Director of Isolation Hospitals, Berne, Switzerland (*International Hospitals Journal*), says:

The hospital is not an industrial affair where the patient arrives like raw material, is placed on a moving band, cured or improved and discharged at the other end as a finished product.

Standardization was expected to ensure considerable saving of money, but it can be asserted that in no case has it apparently reduced hospital expenditure. Standardization should be limited to its proper bounds and not extended to drugs, instruments and food, for here it is quality that matters.

Thus the big hospital school today would limit the size of each institution to 600 beds and many authorities would prefer 300.

But in addition to limiting the size both for efficiency and economy from the administration side, those in charge of these institutions have realized that there exists a grave defect apart from their excessive size. It is found almost impossible to treat patients as individuals, and not as "cases" or "diseases".

R. C. Cabot, Professor of Clinical Medicine, Harvard University, reporting for the Special International Committee on Hospital Social Service, writes:<sup>(6)</sup>

It is necessary to provide a third service beside that of doctor and nurse because doctors and nurses cannot deal effectively with the patient's relation to his family, to his economic life, or to his psychological problems, all of which concern him during his illness in the hospital, and any of which may interfere with his recovery if not attended to. In private practice it is sometimes possible for the doctor himself to attend to these matters. But, under the condition of hospital life, we economize the skill and time of doctors and nurses, even though these "social" services are essential for the patient's satisfactory recovery. In other words, the hospital social service is another specialization dominated by the peculiar condition of hospital environment excluding, as it does, the health-giving influence of family life, work, and a contented mind. The patient's normal connexions to his past, to his future, to his home, to his work, to the spiritual realities that make his life seem worth while to him, are severed or obstructed by life in a hospital ward; yet the maintenance of these normal connexions is essential to the best functioning of his tissues and to his full and rapid recovery.

This article shows that the "big hospital" cannot take the fundamental interest in the patient as a human being that the general practitioner can. At best the hospital social workers can get into touch with only the worst and most noticeable cases, and the best work of this kind is nothing compared with good general practitioner work. The hospital social service workers could be of great service to the general practitioner, to carry out his instructions; but for the big hospital specialist the social worker takes his place as a friend and counsellor of the patient.

I have gathered overwhelming evidence from men of international reputation, men who are in charge

of these large institutions in America and Europe—they are unanimously of the opinion that their patients must be treated as individuals, and that in order to prevent serious illness and to treat it when it does occur, it is absolutely necessary to get into close touch with the patient. Some advocate that this should be done by another special department—the hospital social service—and others, that it should be done by greater use of, and closer cooperation with, the general practitioner. The inference is plain that unless this is done these large hospitals will certainly be filled with the end results of diseases, the great bulk of which need never have become serious, but could have been cured in the early stages by the efficient general practitioner. Thus we come to the fundamental difference between (a) building a health service on the centralized, specialized institutionalism of Russia and to some extent of America, a system which eliminates the general practitioner, and (b) building it on the provision for all individuals of a good family doctor of their own choice, to which service is added all the specialist and institutional care that is necessary.

#### A Change in Attitude of the American Medical Association.

In contrast to the tendency towards group practice on the one hand and centralized institutionalism based on specialization on the other hand, in America there has recently been a movement towards the British solution. The American Medical Association's official attitude was against the British so-called "socialistic, communistic menace" and spoke of "the failure of national health insurance in England" as a reason for avoiding it. The American Medical Association would have nothing to do with national health insurance. But, by January, 1935, a change had taken place and *The Journal of the American Medical Association*, in an official statement on the main lines of advice to be given to President Roosevelt, forecast a scheme of compulsory, contributory health insurance intended to be nation-wide and State-provided and State-administered. All the major principles and features on which the medical profession in Great Britain insists are likely to be established and preserved, though the suggested income limit for insurances is much higher (£600 a year instead of £250).

#### The British Policy.

In Britain the British Medical Association's policy for a general medical service for the nation is based on the general practitioner, and the Federal Council of the British Medical Association in Australia and the medical profession in New Zealand have the same basic policy. The central idea is that the intimate personal relationship between doctor and patient is a fundamentally essential element in all health work. If this relationship has weakened—and I believe it has—

then it is a retrograde step that must be retraced before there can be a good medical service. Not only has this been earnestly advocated by general practitioners of wide experience, it has also been strongly emphasized as essential by most of the well known and experienced specialists. Sir George Newman (Permanent Head of the Ministry of Health) pointed out in his annual report of 1932 that for the great majority of people the general practitioner must remain the most useful and the most economical source of medical service.

E. Rock Carling, surgeon to Westminster Hospital, in his Ramsay Memorial Lecture, June 6, 1936, writes:

The specialist in any department ought to be first a good general physician, and although he may very well know more and more about less and less, he ought not to know less and less about the whole. But it is a temptation to which many succumb, and it is because he is not exposed to such a danger that the good general practitioner remains the salt of the profession.

Then (speaking of the question of operation for splenectomy) he says:

Whose shall be the responsibility of deciding on operations? The surgeon, the physician, the general practitioner, or the patient?

In my humble opinion, the advice finally tendered should be voiced by the general practitioner after full discussion with the specialists in equal council assembled.

The old plan of making the man who is responsible for treatment the patient's own family doctor is still the best and the aim of the medical curriculum should be to fit him so to act.

*The British Medical Journal* goes on to say in commenting on this lecture that:

The position of the family doctor remains secure, and his work is not only essential, but it is of a relatively greater importance than that of any other branch of the profession.

Attempts to short-circuit that position by combination of specialists, or by dictatorship of public health officials are bound to have at best a very limited and temporary success and must ultimately fail.

Many general practitioners are not up to this standard, but what about specialists? Are they all? Leading British schools, including the Australasian, are turning out well-trained men today who would make excellent general practitioners if the future of general practice were assured and if rewarded fairly. Specialization has been rushed, because in many cases it is easier and better paid. It is much more difficult to become a good general practitioner than it is to become a good specialist in some departments. The most intimate knowledge of the patient's personality is required in order to be able to diagnose and treat his ailments; this is the reason why the general practitioner is essential to a good medical service, and the evidence in favour of this is overwhelming.

H. L. Mencken, the caustic American iconoclast, in his "Treatise on the Gods", says, when speaking of the mystic:

Here we have religion in a nearly pure form, with God and suppliant in the easy posture of physician and patient or parent and child.

From a man like Mencken these words are significant.

Sir E. F. Buzzard (President of the British Medical Association this year, Regius Professor of Medicine, Oxford), in his presidential address on the future of general practice, said:

I fail to see why general practice should not assume a more important rôle in the future than it played in the past and at the same time reestablish some of the personal family-doctor relationships, recently imperilled, on sound and useful foundations. General practitioners are more than the back-bone of the profession. The saving of health, the prevention of illness in the long run, must be of greater interest to the community than the treatment of severe illness, and must be initiated by the general practitioner in the home. They (the general practitioners) should help to staff, as part-time officers, those medical services, preventive and curative, which have been diverted to the control of public health authorities. The health authorities should see to it that the general practitioner is regarded and employed as the priest of preventative medicine.

Another authoritative report on the position of the family doctor was made, in July of this year, by the Scottish Health Committee of the Department of Public Health of Scotland. This committee was appointed three years ago "to review the existing health services in Scotland in the light of modern health conditions and knowledge, and to recommend changes in policy and organization considered necessary for efficiency and economy". This report emphasized the position of the family doctor as paramount.

We regard it as of primary importance that the organization of the health services of the nation should be based on the family as a normal unit, and on the family doctor as a normal medical attendant and guardian. It is not for disease or diseases in the abstract that provision has to be made, but for persons liable to or suffering from disease. The first essential for the proper and efficient treatment of individual persons is through personal, not institutional, services.

Similarly the Scottish Committee pointed to the changed outlook of modern medicine towards the individual and the community and wrote:

If individual health is dependent upon heredity, coupled with reaction to environment, it is necessary that the practitioner should be as conversant as may be with the condition both of the individual and of his environment, so that the first principle of a health policy must be to make available for every member of the community a family doctor service embodying the principle of free choice.

Of course, it is understood that the general practitioner is properly prepared and equipped for this rôle. It would be easy to quote the recent considered opinion of a great many prominent medical men, both specialists and general practitioners, of Great Britain and elsewhere, as to the vital importance of a general practitioner service, and that such a service will be the principal factor in preventive, curative and constructive medicine.

#### Conclusion.

Whatever system of medical practice eventually prevails, it will of necessity be largely controlled

by the Government, and to make it a success it is essential that it should have behind it the best elements in the profession, both in point of view of personal character and professional capacity.

As the Government's policy stands today, it has not that support. The profession is willing to assist in bringing into being a really good medical service, but it cannot approve of a system that takes no account of the individuality of the patient.

The policy of the British Medical Association is the welfare of the patient. The profession can be relied upon not to adopt "direct action" methods; all it asks is that due consideration shall be given to the views of its official organization as to the best form of medical service for the people.

#### References.

- <sup>(1)</sup> "Policy for a General Medical Service", Issued by the Queensland Branch of the British Medical Association, 1935.
- <sup>(2)</sup> Richard C. Cabot: "A Challenge to the Medical Profession".
- <sup>(3)</sup> Hugh Cabot: "The Doctor's Bill".
- <sup>(4)</sup> *International Hospital Review*, 1933, page 581.
- <sup>(5)</sup> *International Hospital Review*, 1935, page 136.
- <sup>(6)</sup> *International Hospital Review*, 1933, page 389.

#### RECENT PROGRESS IN ANÆSTHESIA.

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DURING recent years significant advances have taken place abroad in anæsthesia and, although a voluminous literature on the subject is available in the various medical and scientific journals, an account of some personal observations and conclusions may be of value. Considerable omissions must necessarily occur, and many of the opinions expressed must be open to criticism; but while much of the subject matter may be commonplace, certain particulars do seem worthy of emphasis.

#### General Considerations.

Although it is undesirable to attribute specific methods to particular countries, fairly well-defined tendencies exist; at the same time, enterprise and experiment are apparent almost everywhere. In general, England maintains its conservative reputation, at any rate in the large hospitals, where the nitrous oxide, oxygen and ether combination is the standard anæsthetic. In many instances this resolves itself into a frank ether anæsthetic, the gases given concurrently acting chiefly as a vehicle, but nevertheless providing a rapid and pleasant induction as well as the means for a very considerable degree of deoxygenation towards the end of the administration. This usually means a rather lavish flow of gas, tending to nullify the beneficial possibilities of re-breathing, but acapnia is prevented by the dead space within the face mask, distal to the expiratory valve. Cost renders such a technique almost impracticable in Australia, and its uneconomical nature should condemn it anywhere.

Cyclopropane is making rapid progress in England, both with surgeons and anaesthetists, although its cost and the imperfections of apparatus

offer some hindrance. These two factors are rapidly being overcome, there being now available machines incorporating adequate and efficient carbon dioxide absorption attachments, while the gas, being manufactured locally, costs less than formerly. Local and regional analgesia are little used, and then chiefly for minor and superficial procedures. Opinions are much divided about spinal analgesia; in general it is not in favour except for work on the lower part of the abdomen, and especially on the perineum and rectum, while some gynaecologists like it because of the complete relaxation it affords. The common tendency, however, is to avoid it whenever possible.

Chloroform is occasionally used, especially for short administrations in the presence of flame or cautery; very often, in such circumstances, nitrous oxide and oxygen alone suffice, while chloroform is added if necessary. Such a mixture is preferred in one hospital for operations like radical mastectomy, much reduction in hæmorrhage resulting, presumably from the concomitant circulatory depression. When open techniques are used, especially for teaching purposes, a mixture of chloroform with ether (" $C_2E_3$ ") is popular for induction, and is often used similarly as a preliminary to tracheal intubation.

Ethyl chloride is used infrequently, and then almost invariably by an open technique, while the use of ethylene is quite abandoned. Vinyl ether is being experimented with and has been found to have great utility for short operations, especially dental extractions, in children.<sup>(1)</sup>

"Avertin" and paraldehyde are fairly extensively used, the former especially in private work, patients often demanding it on account of its pleasant effects, in spite of its disadvantages in other respects. Thus it is sometimes given for relatively trivial procedures in which even a simple local infiltration would be adequate—in fact, preferable.

The intravenous method of giving an anaesthetic is often favoured for minor procedures, "Evipan sodium" being commonly used, although a new barbiturate, "Pentothal sodium", exhibits unusual possibilities. Experimentally, both are being tried for more prolonged operations, but so far this technique does not approach the simplicity of inhalational methods and is not so easily controlled.

In America, cyclopropane is being very widely used, and the requirements of its administration have resulted in great improvements in apparatus, especially in connexion with carbon dioxide absorption. Nitrous oxide and ethylene are extensively used, while ether enjoys widespread popularity, both alone and as an adjuvant to other agents. Vinyl ether is also receiving much attention, and while its sphere appears to be restricted, its value in obstetric work has been demonstrated.<sup>(2)</sup> Local and regional methods have reached a high degree of efficiency in many clinics, but there is a tendency to restrict the use of spinal analgesia to medium and low level blocks. "Sodium evipan" is somewhat in disfavour, but "Pentothal sodium" has been given extensive clinical trial and in many centres is at present in considerable demand. Much work is also being

done in the production of permanent analgesia by alcohol injection of nerve trunks, this being especially useful for intractable pain due to inoperable malignant disease. Dogliotti's intrathecal technique<sup>(3)</sup> seems to offer great possibilities in this regard.

Anæsthetics are widely given by nurses, but medical workers in numerous centres are demonstrating the superiority of their services. No parallel to this phenomenon exists in British countries,<sup>1</sup> since with our pathological and X ray technicians and dental assistants the law would provide adequate restraint to such intrusion in the professional field. A hypothetical comparison exists in the possible introduction of nurse-appendicectomists here, who would no doubt acquire great technical skill in straightforward cases, but who would lack the scientific and clinical background essential to complete efficiency.

In Germany, local and regional analgesia is the rule; and when a general anaesthetic is used, ether seems to be preferred. Much work has been done on the various gases, especially acetylene, which, however, has been practically discarded. In more than one instance a reversion to ether was indicated, and recently there has appeared on the market an apparatus which delivers warm ether vapour, it being claimed that some chemical alteration occurs, rendering it non-irritant and relatively non-toxic. In spite of its having originated there, "Avertin" does not seem to be in great favour, and while "Evipan sodium", given intravenously, has received an enormous amount of attention in some clinics, it is generally recognized as being of limited applicability. The same applies to spinal analgesia, the use of which is usually restricted to medium and low level blocks. The superiority of "Coramine" over other similar agents for purposes of denarcotization has been convincingly demonstrated,<sup>(4)</sup> especially in its comparative lack of toxicity when given in the large doses required for efficient action.

Apart from local and regional methods, anaesthesia on the Continent is of inferior status, largely because of the lack of proficient anaesthetists, which is the reverse of the situation in England and America. The increasing attention that is being given to the physiological problems involved in anaesthesia is most striking in all countries. In England, and in America especially, the necessity for producing as little disturbance as possible is becoming widely recognized. The fundamental importance of avoiding anoxia, and the appreciation of its damaging effect on all tissues, especially heart, liver and brain, are becoming increasingly known, as is its significance in the production and aggravation of shock. The undesirable influence of chloroform and ether on capillary permeability and the disturbances they produce, especially in sympathetic activity, are well known, so that in progressive centres the tendency is to avoid or to restrict their use whenever possible. The use of carbon

<sup>1</sup> There is an exception in one hospital in Montreal, Canada, where nurses are so employed, contrary to the requirements of the Provincial law.

dioxide is rapidly becoming rarer in anaesthesia, and with the advent of the closed circuit with controllable carbon dioxide absorption it has been realized that adequate concentrations may readily be built up without utilizing any extraneous source of supply. While it is usual to have carbon dioxide available for emergencies, its value in permitting the tolerance of high concentrations of ether, especially during induction, is discounted, as is the necessity for its similar use in deoxygenation. However, its property of facilitating oxyhaemoglobin dissociation is of service in the prevention of anoxia, which may occur without anaemia. Further, it has utility as a test of the excitability of the respiratory centre, and so indirectly of the depth of anaesthesia, especially when other indications are inaccessible, as they often are in surgery of the head and neck.

It is becoming widely acknowledged that anaesthesia comprises a highly specialized system of drug administration with peculiar problems and techniques, while the significance of the anaesthetist in the causation or prevention of shock and other complications is obvious.

#### Premedication and Basal Narcosis.

Much diversity of opinion and practice exists concerning premedication and basal narcosis. Heavy premedication is deleterious, since, although controllable during the maintenance period, it is more or less out of hand both pre-operatively and post-operatively. In the absence of surgery, the production of narcosis carries little risk; but the additional factors of toxic anaesthetic drugs, trauma, histamine, nervous impulses and respiratory restriction and depression seem to invest the situation with grave possibilities. A wider appreciation of the physiological factors involved in anaesthesia is resulting in a growing tendency to recognize the advantages of moderation.

Practically all the agents used cause impaired respiration, with consequent sub-oxygenation, leading to cardiac depression and falling blood pressure, and predisposing to the onset of shock as well as to the development of post-operative complications. Calculation of suitable dosages is rendered difficult by individual variations in reaction, and further uncertainties arise in connexion with the various routes of administration. While the significance of anxiety and psychic trauma is admitted, especially in children and in patients with excessive metabolic activity, and the necessity for adequate sedation is recognized, it is urged that the capacity of the body to sustain physiological insult should not be abused. The production of full basal narcosis with such drugs as "Avertin" for trivial operations on otherwise normal patients is unwarranted and has already brought valuable techniques and agents into disrepute. It is also possible that heavy premedication, especially with opium derivatives, so interferes with tissue metabolism as to hinder rather than facilitate the production and maintenance of adequate and safe anaesthesia.

It is uncommon to withhold premedication entirely except in minor procedures, such as those

performed in the surgery and on out-patients, or when the active cooperation of the patient is required right up to the commencement of the operation. The use of atropine at least is the rule, chiefly because it inhibits secretion and indirectly permits relaxation of bronchial muscle. But atropine also upsets the balance of the autonomic nervous system, resulting in excessive sympathetic activity, which stimulates metabolic processes; it interferes with reflex mechanisms controlling cardiac output, and causes an undue increase in the heart rate; and it favours conjunctival and corneal desiccation, predisposing to inflammation and ulceration. In this last connexion certain disadvantages and dangers involved in the practice of bandaging the eyes become manifest: if premedication is light, discomfort is increased, and if heavy, the risk of corneal damage is aggravated. Atropine certainly has no sedative effect, and very often causes the patient acute discomfort from dryness of the mouth and throat; and although it is presumed to shield the heart from vagal inhibition, the dangers of ventricular fibrillation would appear to be increased, especially in view of the sympathicotonia and hyperadrenæmia associated with the subsequent administration of chloroform or ether.<sup>(5)</sup> When given before nitrous oxide and oxygen anaesthesia, it makes the attainment of satisfactory results almost impossible. Hyoscine, although similar to atropine in many respects, has distinct sedative properties, and is preferable to atropine in spite of its tendency to depress the respiratory centre and in some cases to cause delirium. Moderation in dosage and an adequate interval of at least one hour between its administration and the commencement of the operation largely overcome these disadvantages. Its combination with morphine or opium derivatives, also in reasonable doses, probably represents the most constant and reliable preliminary to any form of anaesthesia or analgesia.

Morphine and the opium derivatives reduce oxygen requirements, so that nitrous oxide and oxygen anaesthesia is facilitated by their use; but, as indicated above, excess must be avoided. The lowered oxygen tension in the blood may result in some cyanosis, which, of little moment in view of the reduced oxygen demand, must never be of more than slight degree. There is very little justification for the belief that cyanosis and anoxia are unrelated; the belief seems to be based on the situation in extreme abnormalities like polycythaemia and congenital heart disease, or profound anaemias, but in average persons the colour is a very reliable guide. Of the morphine derivatives, "Dilaudid" appears to produce the least respiratory depression, while the opium derivatives ("Omnopon", "Pantopon" *et cetera*), containing equal parts of morphine and the other alkaloids, may be less depressant because of the antagonistic and potentiating properties of their various components.<sup>(6)</sup>

Barbiturates reduce sympathetic activity by depression of the hypothalamus,<sup>(7)</sup> so that they should be of particular value before ether anaes-

thetia, especially if atropine is used in addition. The severe respiratory depression produced by large doses of barbiturates makes careful administration essential, especially in view of their usually prolonged action and the danger of pulmonary complications. Unfortunately, when they are given by mouth, their action is variable, and administration in divided doses seems to involve the danger of rapid cumulation, so that it is probably best to combine them with other agents, such as morphine and hyoscine, all in moderate doses. Peculiar value attaches to "Evipan sodium" and "Pentothal sodium", which undergo rapid detoxication, making them comparable with volatile or gaseous agents in that their effects may be to some extent controlled. Given intravenously, they may be safely used to produce full basal narcosis, more especially as immediate premedicating agents.

"Avertin" is considered to have a restricted utility and, while it is very pleasant for the patient, the slowness of detoxication and the consequent prolonged depression are disadvantages. In thyrotoxicosis, children and those exhibiting great anxiety, fear or restlessness, its use in full basal doses is allowable, but otherwise agents of shorter action are better. Being closely related chemically to alcohol and ether, it probably causes similar metabolic disturbances, especially of the glycogen reserve, an adequate level of which is essential to detoxication.

Paraldehyde has the exceptional property of causing little, if any, depression of the respiratory centre, and although in adults it is barely potent enough when given rectally to produce unaided full narcosis, it is valuable, especially in children. Where respiratory depression is preexistent, as in conditions of raised intracranial pressure, it is the premedicating agent of choice. Apart from its smell and the possible danger of rectal damage, it very nearly represents the ideal pre-narcotic.

In calculating the dosage of premedicating agents it is well to remember that body weight is only of general and not particular significance. It is reasonably safe to work on the basis of average requirements, bearing in mind factors introduced by extremes of age, state of health and metabolic activity, mode of action and elimination of the drug used, and the nature of the proposed surgery. Generally, overweight persons require smaller and underweight persons larger doses than are indicated by their weights, although peculiarities in susceptibility, such as those of children to morphine, must be borne in mind.

#### Choice of Anæsthetic.

There is no doubt that the inhalational route is the best one for anæsthetization and that the anæsthetic gases and vapours are the most controllable agents. On an average the whole of the blood passes through the lungs every thirty seconds and so is capable of being made to absorb or to give up such drugs with facility. Intravenous administration is the only other mode comparable in this

respect; but the property of ready control is absent, except perhaps with the rapidly eliminated barbiturates. The introduction of narcotics rectally or subcutaneously is, in comparison, fraught with grave uncertainties.

Ether has over a long period of years and in an extensive variety of circumstances demonstrated its great utility and high degree of safety. The simplicity of its administration and its relatively wide margin of safety make its general use almost ideal, especially in countries of sparse population. In ordinarily competent hands and for the general run of cases it is probably the best anæsthetic.

No agent lacks disadvantages, however, either intrinsic or associated with the requirements of the administration. The sympathicotonia and hyperadrenæmia of ether and chloroform profoundly affect glycogen reserves, both of liver<sup>(8)</sup> and cardiac muscle,<sup>(9)</sup> and may be of significance in the causation of paralytic ileus.<sup>(10)</sup> Their prolonged use also produces a progressive reduction in the alkali reserve.<sup>(11)</sup> Once absorbed, they are depressants, any stimulant effect of ether being peripheral and due to the irritant action of its vapour in the air passages.<sup>(12)</sup> There is also an increase of capillary permeability or sensitization to histamine, facilitating the onset of shock.<sup>(13)</sup> In view of the foregoing, justification exists for the attempt to find less toxic agents, especially for use in prolonged surgery and in difficult and "poor risk" cases.

There is ample evidence, especially from the physiological standpoint, to indicate the superiority of the various gases; but grave limitations exist, either from inadequate narcotic potency, explosiveness, cost, difficulty of transport, or necessity for complicated apparatus, ether being inferior in only two significant respects, namely, toxicity and inflammability. With skilled administration and improved apparatus, however, the gases are best in the majority of cases, especially since ether may be added if desired and for as long or as short a period as necessary. The increased bleeding associated with the use of gases is a frequent objection, but it indicates a much better condition of the circulation than does the reverse seen with ether, and especially chloroform. With these there is a progressive depression of the circulation, combated at first by arteriolar contraction, which is an early manifestation of their toxicity and the first sign of shock.<sup>(13)</sup> Of course, the condition of the patient and the requirements of the surgeon must be given first consideration, and in this connexion, bearing in mind possible post-operative complications, it is probable that in work on the upper part of the abdomen a frank ether anæsthetic is best. It is fairly easily controlled; adequate relaxation for rapid surgery is provided; and with modern techniques and apparatus, involving gas induction and termination, minimum quantities are necessary.

The whole position of gas anæsthesia has been revolutionized by the introduction of cyclopropane.<sup>(14) (15) (16)</sup> It has adequate narcotic potency, and no agent, general or local, has hitherto

proved of such use in "poor risk" cases.<sup>(17)</sup> Post-anæsthetic complications are less than with other agents, and although minor cardiac disturbances (arrhythmias, tachycardia *et cetera*) tend to occur, they are of little immediate and of no permanent significance,<sup>(18) (19)</sup> being chiefly useful as an indication for reduced dosage. The potency of "Cyclopropane" and hence its toxicity are of such degree that with excessive concentrations ventricular fibrillation may occur as a terminal effect, so that its use by inexperienced administrators, especially with inefficient apparatus, is to be prevented at all costs. With it no question of anoxæmia need arise, even with a considerable degree of respiratory depression, owing to the high oxygen content of the anæsthetic mixture; while moderate bag-compression will readily assure an adequate tidal exchange. In anæsthetic proportions its toxicity is insignificant, there being no indication of undesirable effects on capillary permeability or glycogen and alkali reserves. Its only disadvantage is its inflammability, which, although no greater than that of ether, renders it potentially dangerous when diathermy, electro-coagulation or cauterization is to be used. This danger is greatly reduced by the closed circuit method of administration, in which possibilities of static sparking are precluded by the high humidity of the enclosed gases. Cost is also brought within reasonable limits by this means.

Nitrous oxide and ethylene have an extensive field of usefulness in spite of their low narcotic potency, being valuable when full muscular relaxation is not required. The former supports combustion, mixtures of it with ether and oxygen being very explosive; the same applies to its mixtures with ethylene. Ethylene, however, when mixed with oxygen in proportions suitable for anæsthesia, is said to be non-explosive.<sup>(20)</sup> The technique of the administration of these gases is rather exacting, but with suitable apparatus in skilled hands results are excellent, provided the impossible is not attempted. Nothing has discredited these drugs more than their use for extensive abdominal work, involving as it does secondary saturation, profound and prolonged anoxia, and a degree of experience and tolerance on the part of both anæsthetist and surgeon ordinarily unobtainable.

Vinyl ether promises to be valuable as an adjuvant to nitrous oxide and other gases, but with it the avoidance of anoxia is essential, since anoxia has been proved responsible for severe liver damage.<sup>(21)</sup> Otherwise its toxicity is low, and in rapidity of action, the ease with which it is controlled, and freedom from after-effects it is comparable with the various gases; but efficient apparatus is essential for its administration.

#### Special Methods and Problems.

##### Endotracheal Methods.

Endotracheal administration of anæsthetics, especially by the inhalation as opposed to the insufflation technique, is finding greatly increased scope. With it the anæsthetist is in absolute control, even

from a distance, so that it is admirable for all operations about the head, neck and thorax, while it is essential to the efficient performance of resuscitation. It greatly facilitates and makes for safety in oral, nasal and pharyngeal surgery and, by virtue of the degree of respiratory control possible, is useful in work on the upper part of the abdomen, especially since it abolishes even slight degrees of respiratory obstruction, while the constant adequate oxygenation minimizes rigidity. It permits of very rapid variations in the depth of anæsthesia and the maintenance of extraordinarily light levels without adverse reaction. For operations involving awkward postures (laminectomy, nephrectomy *et cetera*) it provides the solution of many difficulties, being of great value in the prevention of respiratory fatigue which originates in the posture and is aggravated by the inferior methods and agents otherwise required. It is contraindicated, however, for thyroidectomies, on account of an increased incidence of tracheitis afterwards.

Controversy exists as to the respective merits of transnasal and transoral intubation; usually the nature of the surgery is the guide, but with the former the reduced faucial irritation permits the maintenance of a lighter level of anæsthesia. Some disadvantages of transnasal intubation are: trauma, causing severe bleeding; transfer of sepsis from the nose to the larynx and trachea, unimportant unless it is acute; and inadequacy of the nasal airways for the passage of so large a tube as may be desirable. Cocainization of the nose, throat and larynx greatly facilitates intubation by shrinking up congested mucosa, lessening the likelihood of bleeding and by abolishing reflexes so that a much lighter level of anæsthesia is required.

##### Intravenous Methods.

The only justification for the use of intravenous methods for inducing full anæsthesia is the possession of drugs capable of rapid elimination; and so far only barbiturates like "Evipan sodium" or "Pentothal sodium" conform to this requirement. Given intravenously, ether, alcohol, "Avertin", paraldehyde *et cetera* have gone into well-merited oblivion, and the use of anything which involves profound and prolonged interference with blood chemistry is not justifiable. Objections on these grounds have been raised against such use of the barbiturates, and although little disturbance appears to arise from relatively short administrations, there may be much disturbance if administration is prolonged. Therefore a less toxic drug, given by the more controllable inhalation method, is preferable for lengthy operations.

Intravenous techniques are extremely useful for short painful procedures; for cases in which flame or cautery is to be used, especially when the presence of inhalation apparatus would be inconvenient; and for rapid production of basal narcosis. The introduction of "Evipan sodium" placed in the hands of the profession an agent of great value, requiring little more than ordinary skill and care

for its safe use; and although it is sometimes unsatisfactory, due attention to certain details ensures success. Jactitation, however, is a common manifestation, often interfering greatly with the operation in hand.

"Pentothal sodium", a thiobarbiturate, appears to have many advantages over "Evipan sodium". It is equally, if not more, powerful and rapid in action; recovery is speedier; and jactitation is rare. Its chief disadvantage is that perivenous injection will cause a severe reaction and sloughing. It has received extensive clinical trial,<sup>(22)</sup> and both as a basal narcotic and total anaesthetic appears to be quite safe provided a careful technique is followed.

#### *Anæsthesia for Intracranial Operations.*

In intracranial operations the chief difficulties are the prolonged nature of the surgery, excessive bleeding, and the depressed state of the respiratory centre. Any premedicating agent or maintenance anaesthetic tending to increase this depression is contraindicated, and, in view of the desirability of control throughout, a closed inhalational, preferably endotracheal, technique would appear to be better than local or regional analgesia.

On account of the often small tidal exchange, chloroform may be the only practicable agent for induction of anaesthesia, and may also be desirable for its maintenance when electro-coagulation is to be used; although ether does not offer great risk in this regard, owing to its weight and to its being well blanketed-off by the drapings, which are often moist with blood or saline solution. Probably ether with oxygen is the most commonly used anaesthetic for intracranial surgery; and to what extent it is responsible for unfavourable results, especially in view of the prolonged administration, seems to be lost sight of. These patients are no more resistant to its deleterious effects than are those subjected to other types of surgery; indeed, they may be more susceptible.

While "Avertin", followed by nitrous oxide and oxygen, is very often quite satisfactory, difficulties do arise. An alternative is to use paraldehyde as the pre-narcotic, since it does not depress the respiratory centre, and to effect maintenance with ethylene and oxygen given by the endotracheal route. With the closed circuit and carbon dioxide absorption much economy is possible and the safety of this anaesthetic mixture as regards explosion risk would be enhanced by its being enclosed and by its high humidity. Calcium gluconate before and pituitrin during the operation would help to ward off shock, as would the adequacy of oxygen supply and the prevention of acapnia. The risk of a sudden increase in depth of anaesthesia from improved respiration following the decrease of intracranial pressure on opening the *dura mater* is much less with the gases than with ether or chloroform, while with them and the apparatus essential to their use prospects of success in resuscitation are greatly enhanced.

#### *Anæsthesia in Infants and Young Children.*

Infants and young children present a problem in anaesthesia largely owing to the small tidal excursion of their breathing and to their extreme susceptibility to anoxia. This causes difficulty in introducing not only sufficient anaesthetic, but, at the same time, an amount of oxygen adequate to their relatively high metabolic requirements. The dead space in the face-piece of most apparatus is a factor in this regard, making the administration of nitrous oxide and oxygen, and even ethylene and oxygen, unsatisfactory, chiefly because of the inevitable anoxia.

Although ether is often said to be the best anaesthetic for children, there is no reason to believe that it is less toxic to them than to adults, and its popularity is probably determined by the difficulty in giving children satisfactory gas anaesthetics. With an open or semi-open technique, owing to the heaviness of ether vapour, an adequate concentration is easily provided at the respiratory orifices, while the ready access of air prevents undue sub-oxygenation. The same considerations apply to the use of ether in a closed system with excess oxygen, so that cyclopropane, with its greatly inferior toxicity, should be an admirable substitute for it. If, however, the closed circuit with carbon dioxide absorption is to be used, the questions of valvular resistance and gaseous inertia obtrude themselves; but they are likely to be of significance only when respiration is very feeble. When this is so the replacement with helium of the nitrogen and of as large a proportion of the oxygen as possible<sup>(23)</sup> will to a great extent overcome these disadvantages.

In premedication the susceptibility of children to morphine derivatives necessitates great care; and although children are able to tolerate without ill-effects large doses of drugs capable of fairly rapid elimination ("Avertin"),<sup>(24)</sup> those producing no respiratory depression (atropine, paraldehyde) are preferable. Endotracheal techniques are very satisfactory for even small children, and may be made to obviate to a large extent the dead space factor mentioned above, especially if a combined inhalation and insufflation method is used. For short operations vinyl ether, preferably with excess oxygen, is very suitable, especially for guillotine tonsillectomy, dressings, dental extractions *et cetera*. It is very much less toxic than ethyl chloride, but as it is less volatile the incorporation of a small vaporizing chamber between the bag and face-mask is necessary.<sup>(1)</sup>

#### *Anæsthesia and Analgesia in Obstetrics.*

Numerous methods of alleviating suffering in childbirth have been devised and abandoned largely because of the disadvantages associated with non-inhalational medication (uncertainty of action and of control), or because of the toxicity of the inhalant used (chloroform). Combined and singly, chloral, bromides, barbiturates, morphine, hyoscine, heroin, "Avertin", paraldehyde *et cetera* have all

been tried and found more or less wanting; and it seems that there is little tolerance to interference with so essentially physiological a process as labour.

It is often impracticable to have an anaesthetist in attendance throughout, especially since full anaesthesia is not required, and the development by Minnitt<sup>(25)</sup> of his machine for self-induced analgesia is a significant advance. This nitrous oxide and air analgesia is remarkably satisfactory, and patients of average intelligence require little instruction in order to be able to use the apparatus. It is hoped that further experience will result in the evolution of more economical apparatus, since Minnitt's method requires about thirty-five gallons of nitrous oxide per hour, which makes costs heavy and also involves the question of providing adequate and portable gas supplies.

When the attendance of an anaesthetist is possible, cyclopropane offers great advantages, especially in rapidity of action and absence of sub-oxygenation, while for operative obstetrics it is the anaesthetic of choice.<sup>(26)</sup> Vinyl ether is also valuable on account of rapidity of induction and recovery, but excess oxygen must be used with it owing to the danger of liver damage.<sup>(27)</sup> Of course, in an anaesthetist's hands nitrous oxide with oxygen is very suitable; and with all these methods the value of carbon dioxide control, especially in the prevention of *post partum* hæmorrhage, is undoubted.

Epidural analgesia, referred to subsequently in more detail, seems to offer possibilities of great value in obstetric work, more especially since there is little interference with voluntary muscular contractions in the affected area. Experience will determine to what extent the analgesia favours perineal damage and also if disturbance of any reflex mechanism is involved.

#### Local and Regional Anæsthesia.

While a greatly increased application, to suitable cases, of local and regional methods of analgesia is desirable, there are disadvantages in the relative difficulty of the techniques involved and the frequent necessity for heavy premedication, either to produce quiescence or to give the patient and surgeon comfort. As unconsciousness is desired by a large majority of patients, it is preferably obtained and regulated by controllable methods, either inhalational or intravenous, which, indeed, may be made auxiliary or supplementary to the local infiltration or regional block. The barbiturates are valuable antidotes to the toxic effects of the drugs commonly used for the production of local analgesia, and given intravenously are thus of utility in two distinct respects.

There are three outstanding techniques for obtaining extensive analgesia with minimal trauma and relative simplicity, namely, the intrathecal or spinal technique, the trans-sacral and caudal, and the epidural. Careful selection of cases and skilled administration should greatly increase their

scope and overcome the disrepute into which they have declined largely because of their use by the inexperienced and under unsuitable conditions.

A wide variety of drugs is available for spinal analgesia, and at present the heavy solutions of procaine ("Novocain") or "Percaïne"<sup>(28)</sup> possess superior advantages, although light solutions of the latter are valuable, especially when used by the technique of Etherington Wilson.<sup>(29)</sup> Owing to the extensive posturing it requires, Howard Jones's technique has tended to decline in favour. Spinal analgesia is extremely valuable when complete muscular relaxation is required and when intestinal distension exists, wherein its possible value in paralytic ileus is of significance. Untoward effects on the circulation are frequent, especially in high blocks, and for this reason its use in conjunction with heavy premedication involves grave risks. The administration of ephedrine beforehand, and the concurrent inhalation of carbon dioxide and oxygen, or of oxygen, or nitrous oxide and oxygen with rebreathing,<sup>(30)</sup> permit a great degree of control of such undesirable effects; these effects, however, may recur post-operatively, especially with the drugs of prolonged action. While the occurrence of post-operative headaches, tympanites, ophthalmic and other muscular pareses is comparatively rare when careful techniques are employed, respiratory complications appear to be of undiminished or even increased incidence.

Trans-sacral and caudal block provide a fairly wide area of analgesia with only moderate trauma, although from seven to ten needle punctures are needed, and localization of the injections requires some skill. Some argue that the simpler low spinal method is preferable, since it gives equally extensive analgesia without great risk of untoward effects, while there is much less discomfort to the patient during injection. Lundy's technique is admirable, and his manual teaching exercises for facilitating the recognition of the various bony landmarks involved and the location of the sites of injection are valuable.<sup>(31)</sup>

Epidural block<sup>(32) (33)</sup> is a remarkable procedure, and promises largely to supplant spinal analgesia, being similar in effect yet certainly devoid of most of its disadvantages. The technique is much the same, but without dural puncture, the object being to deposit the solution extrathecaly. It is really the application of the principles of caudal block to higher levels, and injection is preferable in the lumbar region below the *conus medullaris*, when by suitable posturing the area of analgesia may be controlled to a remarkable extent. One extraordinary effect is that the anterior nerve roots are little affected, but owing to the interruption of the reflex arcs in the posterior roots relaxation is perfect. The technique of injection is very delicate and the onset of analgesia rather slow, but there is a corresponding prolongation of its duration, so that procaine ("Novocain") is usually adequate. The absence of paresis is proof that the injection has

been extradural, and may be of profound significance in upper abdominal and thoracic work, in that respiratory embarrassment need not occur, since the rhythmic discharges from the respiratory centre may still reach the intercostal muscles. Indeed, it may be possible to allow the solution to ascend with safety beyond the phrenic roots, since it can go no higher than the *foramen magnum* owing to the union of *dura mater* and periosteum at that level. Visceral sensibility is sometimes imperfectly suppressed, but control may readily be effected by direct splanchnic and vagal block during the course of the operation. No doubt disadvantages will become obvious as time goes by; further experimental work is needed, and every effort should be made to prevent the discredit of the method by its haphazard use in inexperienced hands.

#### Summary.

1. Anæsthesia has emerged as a specialty, and, in view of the scope of the subject, deserves encouragement and facilities for expansion.
2. Many valuable improvements have arisen abroad, and they should be introduced to this country to correct the tendency to stagnation which may be readily observed.
3. The principle of using controllable in preference to uncontrollable drugs and techniques is emphasized.
4. The introduction of factors involving gross and prolonged interference with physiological processes is condemned.
5. The necessity for exercising at all times strict moderation in premedication is urged.
6. The superiority of the gaseous anæsthetics, especially cyclopropane, over the volatile is demonstrated.
7. The giving of anæsthetics by the endotracheal route possesses exceptional advantages.
8. Intravenous methods have restricted utility.
9. Anæsthesia for intracranial surgery involves special problems, demanding knowledge and skill for their solution.
10. Infants and children require special consideration in connexion with anæsthesia.
11. The situation of obstetrical anæsthesia and analgesia is unsatisfactory.
12. Spinal and epidural analgesia are valuable in suitable cases and in competent hands.

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#### CHEMICAL WARFARE.<sup>1</sup>

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THE peculiarity of chemical warfare is the ever-present possibility of surprise, which in itself is a most effective weapon. Mustard gas may be sprayed from aeroplanes and even produce casualties amongst troops who are unaware that

<sup>1</sup> Read at a meeting of the Western Australian Branch of the British Medical Association on August 19, 1936.

they have been exposed to gas; and this sense of uncertainty is injurious to morale. Also, there is the fear of the unknown; but it is not likely that any compound of a more alarming nature than is known already will be produced in the immediate future.

While most gases can be used in the artillery shell, the civilian population is more exposed to the risks of bombs dropped from aircraft. These bombs are particularly suitable for charging with gas because they do not have to withstand the shock of discharge from a gun; the steel casing can be much thinner, and thus the quantity of gas contained in a bomb will form a large fraction of the total weight. This type of bomb will not bury itself in the ground, and the full effect of the gas will be produced. Also, a gas like mustard gas may be sprayed from an aeroplane in fine drops over a fairly large area.

Chemical agents are either gases at ordinary temperatures, liquids which vaporize on release, or minute particles like smoke; they can be grouped into four classes:

(a) Choking: For example, chlorine and phosgene, which are gases and therefore non-persistent.

(b) Nose: These are arsenical substances which can be liberated into the air as smoke, and so consist really of minute particles rather than actual gas or vapour. They are therefore non-persistent.

(c) Tear: One variety consists of particles like the nose gases and is non-persistent; the other variety is a fluid forming an invisible gas and is persistent.

(d) Blister: Mustard gas is an oily liquid and is persistent. Lewisite, like mustard gas, is persistent. It contains arsenic and acts more rapidly than mustard gas.

The effectiveness of a gas may be considerably influenced by the weather. A high wind blows the gas away; hot weather causes persistent liquids to vaporize, and so the danger from their vapour will be greater. Light rain has little effect, but heavy rain tends to wash gas out of the air and destroy any liquid on the ground. The most dangerous condition is mild calm weather with or without fog; the weather at night is usually more suitable for the use of gas than during the day.

#### Choking Gases.

Choking gases, when inhaled, cause intense irritation of the air cells in the lungs, with great oedema and resulting deficient oxygenation. In fatal cases, death from suffocation occurs generally within twenty-four to forty-eight hours after exposure. The onset of symptoms may be delayed for some hours, so that whenever men have inhaled such gases they should be kept under observation and made to rest for twenty-four hours. The treatment is rest, warmth and oxygen.

If the colour becomes bluish, oxygen is administered under orders of a medical officer. If the patient is plum-coloured or pallid, continuous

oxygen is administered by Haldane's or other apparatus until the colour becomes normal and until there is no relapse when the giving of oxygen is stopped. In early cases venesection may be of value; later, if the blood is concentrated and tarry, normal saline solution is given either by infusion or intravenously.

#### Nose Gases.

Nose gases cause intense irritation and pain in the nose and wind pipe. These symptoms rapidly disappear, and there is rarely serious illness. The period of unfitness for work lasts from a few hours to a few days. Inhalations of chloroform and washing out the nose and mouth with a solution of borax, bicarbonate of soda and salt (one part of each to 100 parts of water) often relieve the pain. In the majority of cases removal from the poisonous atmosphere and rest are all the treatment that is necessary.

#### Tear Gases.

Tear gases cause immediate and intense burning pain in the eyes with much watering and spasm of eyelids. Removal from the poisonous atmosphere will bring rapid relief, and casualties should be fit to return to duty in a few hours. A few may develop conjunctivitis, which is rapidly cured by washing the eyes with normal saline solution or weak boracic acid lotion.

#### Blister Gases.

Blister gases are the most effective war chemical and a great menace to the woollen clad soldier.

On first contact with a mustard gas a faint odour like horse-radish or mustard is noticed, but the sense of smell is soon lost if a respirator is not worn. Symptoms begin to appear in one to six hours after exposure. First there is a burning pain in the eyes, with profuse watering and spasm of the eyelids; later, conjunctivitis appears and possibly ulceration. Skin injuries from the liquid begin to show in four to twelve hours (rarely, in one to two days) after exposure, and vary from slight redness to severe burns, in which blebs containing a watery fluid appear towards the end of the second day. The blisters are painful, tend to be easily infected, and are slow in healing. The vapour is particularly liable to attack moist areas of the skin, for instance, armpits, groin and scrotum, and burns in these situations are always painful. If the vapour is inhaled there result inflammation of the air passages and later a secondary bronchopneumonia, but not the intensive oedema and congestion caused by the choking gases.

#### Treatment.

All contaminated garments should be speedily removed.

The eyes should be immediately and frequently irrigated with saline solution, weak boracic lotion or water; even water from a water bottle will do much to lessen the ultimate severity of the lesion, although serious damage to the eye (severe ulcera-

tion with partial or complete loss of vision) is inevitable if the contamination is caused by more than a minute drop. The importance of protecting the eyes by respirators or goggles cannot be overstressed.

There are four different first-aid treatments for the skin, and the best is that which is the most readily available and which can be quickly applied: (i) Rub protective ointment well into the skin for two or three minutes; then wipe off. (ii) Rub into the skin a mixture of bleaching powder, one part, and water, two parts; leave on for two to three minutes and then wash off. The ointment is also better washed off, although it irritates the skin less than the paste. (iii) Swab the affected area with paraffin, petrol or methylated spirit, taking care to destroy the swabs and to prevent the liquid running over the other parts. (iv) Scrub in soap and water until the skin turns pink. Later, blisters should be pricked under aseptic conditions and the dead skin removed. The area should then be treated by the application of fresh 2% tannic acid solution by a fine spray or the compress method. Owing to liability to infection, great care should be taken to prevent sepsis.

Nausea and vomiting, which often occur in the early stages of poisoning, may be relieved by the drinking of warm water containing 2% of bicarbonate of soda. Hoarseness and cough may be relieved by inhalation of Friar's balsam (half an ounce to a pint) or camphor in liquid "Vaseline" as a throat spray.

If bronchopneumonia develops it should be treated on ordinary lines. It should be impressed on all casualties from mustard gas that complete recovery is the rule. It is only in those who have been exposed to the vapour for long periods without a respirator, in those with severe eye lesions or in those with very extensive burns that serious results are to be expected.

#### First-Aid Treatment of Gas Casualties.

The symptoms above described should make it possible to decide whether or not a man is gassed, and which group of war gases has caused the casualty. This is important, as it is necessary to apply the correct form of treatment.

#### Choking Gas Casualties.

In choking gas casualties: (i) The respirator must be put on and kept on until the patient is out of the gassed area. (ii) Since rest is necessary, the patient must be put on a stretcher as soon as possible. (iii) The patient must be kept warm to prevent shivering. (iv) Artificial respiration must not be attempted except in patients that have ceased to breathe, because respiration should be as quiet and easy as possible. (v) Alcohol should not be given; the best substitute is hot sweet tea.

#### Nose Gas Casualties.

In nose gas casualties: (i) Respirators must be put on and kept on until the patient is out of the gassed area, although, as symptoms are always

delayed, they may not appear until the respirator is put on, thus tending to cause loss of confidence in the respirator. (ii) Any stimulant (for example, rum or tea) may be given. (iii) These patients need not be evacuated to the medical services, as they recover completely after a few hours.

#### Tear Gas Casualties.

In tear gas casualties: (i) Adjusting the respirator gives immediate relief. (ii) The eyes should be washed with a solution of one teaspoonful of common salt to one pint of clean water. This gives great relief. (iii) These patients must not be evacuated to the medical services, as they recover quickly.

#### Mustard Gas Casualties.

Casualties from mustard vapour should not be evacuated to the medical services unless they show the presence of burns, or unless the eyes or breathing passages are affected. If burns become apparent some hours later, the sufferers must then be evacuated. If casualties are caused by liquid, the patients' clothing should be removed at once and the first-aid treatment already described should be given; but men should not be evacuated to the medical services until they are incapacitated by burns, unless it is known that liquid mustard gas has entered their eyes, when they should be evacuated at once.

#### Lewisite Casualties.

Lewisite penetrates the skin more rapidly than mustard gas, so it is of the greatest importance that treatment should be put in hand immediately after contamination. Pending further instructions, treatment will be the same as that for mustard gas.

#### Military Defensive Measures.

Military defensive measures are as follows:

1. Gas alarm and all-clear signals.
2. The respirator, which protects against all gases that affect eyes, air passages and lungs. Anti-gas goggles and the protective cape protect against aircraft spray.
3. Protective clothing, which is only used by personnel employed on special anti-gas duty. Reliance must, therefore, be placed on the removal of contaminated clothing or equipment and the cleansing of the patient at the earliest possible moment.
4. Gas-proof shelters, which are seldom possible or even necessary in mobile warfare. First-aid posts and dressing stations may be made gas-proof by a closely fitting curtain of anti-gas blanket material over the entrance which slopes outwards 20° from the vertical and overlaps on the ground by about nine inches.
5. Decontamination of clothing and equipment, of soil and of buildings. I shall only mention that contaminated clothing and equipment require to be boiled for one-half to three hours; leather articles and sun helmets require to be baked for eight hours, and woollens require to be placed in a steam disinfectant for one hour. Liquid mustard gas may

be removed by hosing with water, and ground may be made safe after contamination by covering with a mixture of bleaching powder, one part, and earth, three parts, or with three inches of fresh earth.

#### Classification for Evacuation.

From the point of view of evacuation, casualties may be classified as follows: (i) Slight cases. (ii) Early acute suffocative cases. These will be stretcher patients from the first, and they will be retained for forty-eight hours in the first medical unit reached. (iii) Late acute cases. In the early stage these patients may be allowed to walk, and then they may be evacuated sitting up, since the bronchopneumonia does not develop before the third day.

#### Civilian Air Raid Precautions.

In taking precautions against civilian air raids the assistance of private medical practitioners, of nurses, of members of the Order of Saint John of Jerusalem and voluntary aid detachments will be necessary; it is to these people that the public will look for guidance. The fire brigades should be instructed in anti-gas measures; but I shall deal with the more medical aspects of the matter.

Civilian casualties may be reduced to a minimum: (i) by the selection of a suitable room in house and in place of business which is rendered gas-proof by pasting strong paper over windows after boarding them on the outside, by hanging a blanket outside the door and by closing the fireplace and even the keyhole; and (ii) by remaining in the gas-proof room from the "warning" to the "all-clear signal".

#### Organization Required for Treatment of Gas Casualties.

The requirements for the treatment of gas casualties (and decontamination of personnel) are as follows:

1. First-aid parties, each of four men trained in first-aid, and supplied with respirators, protective clothing and first-aid pouch. A limited number of complete protective suits will be required, but for general use the equipment is: oilskin gloves, oilskin smock, rubber gum boots to the knee, worn over a strong cotton suit or overall, and respirator. Twelve parties (six on duty and six in reserve) are required per 100,000 population. These parties are posted in convenient depôts not more than two miles apart. It would be convenient to locate a first-aid party at a first-aid and decontamination centre.

2. First-aid and decontamination centres, which should be under one roof or very close together, and not more than two miles apart. Separate centres will be required for men and women. The staff requires respirators and protective clothing. The procedure is that of undressing and thorough cleansing, and supplies of clothing will be issued in exchange for contaminated clothing, which will have to be sent for decontamination.

3. Casualty clearing hospitals, which are local hospitals cleared of patients on threat of an air

raid. The staff requires respirators and some protective clothing. The hospital must be provided with a decontamination section.

4. Base hospitals outside the town, for example, schools or hospitals, whose function is to receive all patients from casualty clearing hospitals who may be moved with safety. A proportion of the staff requires respirators and protective clothing.

5. An ambulance service for transport of patients in accordance with the organization. Drivers and attendants will need respirators and should be trained in first-aid and anti-gas precautions.

#### First-Aid and Decontamination Centres.

At first-aid and decontamination centres an adequate supply of hot water and shower baths is necessary; suitable accommodation will often be found in public baths, wash houses and schools. In adapting buildings and huts for these centres the following points will be borne in mind: (i) Absorbent material should be covered with paint or varnish. (ii) Plaster walls should be covered with a hard enamel paint. (iii) Concrete floors should be treated with sodium salicylate solution; wood floors should be covered with good linoleum; in an emergency plain wood may be used, but it must be kept well scrubbed.

The layout of the centre must insure that contaminated persons (blister gas) and non-contaminated persons never meet.

If the patient is contaminated, at the entrance his boots must be covered with bleaching powder. On the veranda outer clothing and boots must be removed. In the undressing room underclothing is removed. (If there is no veranda the room should be divided into two.) In the bathroom patients should be instructed to scrub themselves thoroughly all over with soap and a brush during the five minutes they are under a warm shower. In the dressing room fresh clothing is issued. The average time taken by uninjured persons for undressing is less than five minutes; for bath, five minutes; for drying, five minutes; for examination and dressing, ten to fifteen minutes. Thus the output with ten showers is about one hundred persons an hour.

Uncontaminated persons have their wounds dressed and are given first-aid treatment.

The total staff required for each shift is as follows: One officer in charge, eight trained persons, twelve untrained persons, four clerks, one storeman, one engineer, two doorkeepers.

#### Summary of Preparations for Gas Attack.

In the event of gas attack the action necessary may be summarized as follows:

The public must be instructed about gas-proof rooms, signals and sites for first-aid and decontamination centres. Medical practitioners, members of the Order of Saint John of Jerusalem, nurses, voluntary aids, fire brigades and police must be instructed in anti-gas measures. The number of trained persons required must be estimated. Plans must be made for preparation of first-aid and decontamination centres, casualty clearing hospitals

and base hospitals. Supplies of respirators, gas-proof clothing, rubber boots, stretchers, blankets, oxygen apparatus and medical equipment must be secured. And, finally, arrangements must be made for ambulance transport.

#### Speculations on Gas Warfare.

There is the widest difference of opinion as to the effect of unrestricted air warfare. The development of modern civilization has provided in industrial centres perfect targets for the bomb and, according to Major O. Stewart in an article in *The Army Quarterly*, July, 1936, has led to the adoption by many of the world's leading air staffs of the doctrine of central shock; this doctrine is helped by the greatly increased speed, range and carrying capacity of the modern bombing aeroplane.

Major-General E. B. Ashmore, in his book "Air Defence", points out that, as a capital, London is indispensable to its nationals to a degree unequalled in any other country in the world. Other European capitals are all less easy to attack, less vulnerable as air targets and less vital to the existence of their respective countries.

The possibility of an air attack on London, made with all an enemy's resources in an attempt to deliver a knock-out blow, perhaps even before an actual declaration of war, would be a desperate adventure for the enemy, and would probably cause much destruction. But few people who have seriously studied the matter believe that an air raid such as this could decide a war.

Lieutenant-General N. N. Golovine, a Russian, in an article on air strategy in *The R.A.F. Quarterly* of April 1936, has made an estimate of the number of bombing aircraft required for even the partial destruction of a European capital city. Taking 25 grammes as the average amount of chemical necessary to gas one square metre, 75 tons would be required for one square mile, and 5,750 tons for the whole area of London. Adding 30% at least for aeroplanes which are lost or which do not reach their objective, and adding an equal number on the basis of one reserve aeroplane to one service aeroplane, the number required for the destruction of London would be 16,400 one-ton twin-engined aeroplanes, exclusive of fighting planes for escort.

General Golovine also points out that anti-aircraft guns have much improved. In addition to the ordinary three-inch and five-inch guns, there are a considerable number of one-inch and two-inch guns which are really large bore shell firing machine guns, and some of these are claimed to have a vertical range of 30,000 feet. There has also been great progress in locating and predicting the course of aircraft, and he considers that a massed aeroplane attack in clear weather would have a poor chance of maintaining formation or even of surviving destruction below 15,000 feet, that total and simultaneous destruction of a capital city was impossible, and that air raids with limited objectives would prove a sufficiently difficult task even for a numerous and well-armed air force.

Prediction is, however, a complicated matter. In shooting at a machine at any considerable height, a shell may take half a minute to reach the target, and in half a minute a modern aeroplane can easily travel a mile. Since the War, a method of accurate prediction has been evolved, but, even if the prediction is correct, the shoot will fail unless the pilot keeps on his regular course, and this is the fundamental limitation to all anti-aircraft shooting. In the last and biggest air raid on London on May 19, 1918, there were thirty to forty bombing machines, and of these ten were lost—three were destroyed in combat, three were shot down in flames, three crashed in Belgium, and one landed in Essex. The raid was, therefore, a costly one for the enemy, and the total loss was 49 killed, 177 injured, and damage amounting to £130,000.

General Golovine considers that the "bomb of the other fellow" strategy will fail, and that the quickest way to bring air attacks to an end is to take such toll of an enemy that he will find bombing too expensive and will therefore stop his attacks. He also has attempted to evolve a scheme for the defence of London, the essentials of which are: (i) balloons with wire netting aprons, ten to fifteen miles from the city and 8,000 feet high; (ii) extension of the anti-aircraft gun zone to the coast; (iii) a higher proportion of fighting squadrons compared with the number of bombers intended for retaliatory raids; (iv) observation and transmission of information from posts across the channel.

So far as gas itself is concerned, if people are well instructed in anti-gas precautions, the element of panic, which is the chief danger from gas attack, could be largely eliminated.

#### TREATMENT OF CIVILIAN GAS CASUALTIES.<sup>1</sup>

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In dealing briefly with treatment of civilian gas casualties we must bear in mind that such casualties are likely to differ from military casualties in that we have to deal with untrained persons or with persons not subjected to discipline. In consequence, we are faced with lack of preparedness against gas attack and also with the great factor of mob-hysteria or "the fear of the unknown". In this regard, may I quote Major Paul Murphy, formerly Director of Experiments of Chemical Experimental Station, Porton? He stated recently that one of the curious discoveries of the War was that lethal and toxic gases, liquids and solids, were less poisonous than had been supposed; poisonous, that is, in the sense in which that word is used by chemical warfare experts. A really poisonous substance from this specialized point of view is one

<sup>1</sup> Read at a meeting of the Western Australian Branch of the British Medical Association on August 19, 1936.

which can be effectively projected into the atmosphere or onto the target attacked, and which, on dilution with the air, does not become ineffective too quickly and is not too adversely affected by meteorological factors; or one which cannot be easily or effectually countered by defensive measures such as respirators and protective clothing; and, lastly, one which can be manufactured in sufficient quantities to be used on the vast and wasteful scale required by war. It is hardly surprising that this experimental sieve strained off the vast majority of the substances examined. Of the thousands experimented with in the various countries concerned in the long drawn out struggle, perhaps a hundred attracted the serious attention of the investigators. Of these, some forty found their way into the battle zone. Today, as the result of the experience of the War and subsequent research, a bare half dozen engage attention as having possible value for future use. Save for these few, all have vanished into the historical records and museums of gas experimental stations. Granted that some of these verdicts of dismissal may be reversed, is it not obvious that there must be stringent limiting factors in chemical warfare to account for such a drastic purge? At any rate, this wholesale elimination is worth remembering when the discovery of yet another world-destroying gas is proclaimed. The odds are against its ever being heard of again.

In order to minimize gas casualties amongst the civil population, it is necessary, in consultation with headquarters staff of lines of communication area, to arrange collaboration with police, municipal authorities, public health organization, fire brigades, public hospitals, ambulance transport, and first-aid organizations for (i) instruction of the public, (ii) warning of imminent attack, (iii) provision of gas shelters for general and private use, and (iv) decontamination. The civilian population must be taught to have confidence in the respirator and in the measures taken for its protection. People must also be taught that the casualty producing power of gas is enormously greater than its killing power.

From the more purely medical aspect of treatment it will be necessary closely to question and examine all persons supposed to be gassed, lest available hospital accommodation be filled with those who have smelt the fumes of high explosives only.

Let us consider briefly the types of gases:

- (a) Vesicants: Mustard and Lewisite.
- (b) Lung irritants: Chlorine, phosgene and chloropicrin.
- (c) Sensory irritants: Diphenylchloroarsine and diphenylcyanoarsine.
- (d) Lachrymators: Chloroacetophenone.
- (e) Direct poisons of the nervous system: Hydrocyanic acid gas.
- (f) Gases interfering with the respiratory function of the blood: Carbon monoxide.

Groups (b) and (e) are lethal agents. Group (e) is omitted on account of the difficulty in maintain-

ing sufficient concentration. Groups (c) and (d) are capable of putting a man out of action immediately, but are transient in effect. The gases in group (a), though intensely toxic, have casualty-producing power greatly in excess of killing power. From your point of view, the most important gases are the vesicants and the lung irritants.

#### Mustard Gas.

The outstanding features of mustard gas (dichlorodiethylsulphide) are its odour, toxicity, insidious action, delayed action, and the delayed healing of the burns it causes. The odour is likened to horse-radish or garlic; and it is important to remember that after a short exposure to weak concentrations of the gas, one is unable to appreciate the odour because the sense of smell becomes dulled. No signs or symptoms are experienced immediately after exposure or contamination. After the lapse of two hours or longer signs of injury may appear, without as yet any subjective phenomena, followed later by symptoms which subsequently develop rapidly. The eyes begin to smart, and the conjunctiva is congested. Rhinitis, nausea, retching and vomiting associated with epigastric pain begin about the same time. During the next few hours these symptoms are intensified and a harsh dry cough appears. Skin inflammation is now seen as a dusky erythema on the exposed areas, and also on those areas which are moist or greasy—axillae, groins and perineum.

At the end of twenty-four hours the patient is suffering great distress, particularly from the conjunctivitis and frontal headache. The pulse-respiration ratio is not disturbed. Death rarely takes place in the first twenty-four hours. During the second day the condition is aggravated, and, in addition, an acute bronchitis is present, associated with abundant muco-purulent sputum. Secondary infection of the necrosed respiratory mucous membranes soon leads to a bronchopneumonia with moderate cyanosis and cardiac dilatation. Death may occur from the second or third day to the third or fourth week.

With regard to the local lesions (on the skin *et cetera*), a mustard burn shows: (i) a slow and progressive development, (ii) an intense inflammatory reaction, (iii) marked delay in repair, and (iv) a great tendency to septic infection. The burns, when healed, leave a deeply pigmented scar.

The pathological lesions which cause death are, briefly, an acute inflammation of the air passages from the larynx downwards, followed by desquamation of mucous membranes with formation of false membranes. These membranes, in addition to the actual obstructive effect they produce, form a suitable pabulum for growth of organisms. An acute purulent capillary bronchitis is superadded, leading to collapse of areas of lung and to bronchopneumonia. Further, in the late cases, the burns may lead to a general septic infection, and occasionally cause inflammation of the mucous membrane of the large intestine.

### Treatment.

Preventive treatment consists in the use of respirators, decontamination of clothes and boots, and the wearing of protective clothing where possible.

After the event, it is necessary to assure the casualty at the earliest possible moment that sight will not be lost. The eyes should be bathed liberally with bland lotions, such as solutions of boric acid, normal saline or 2% sodium bicarbonate. Paraffin oil should be put in the eyes thrice daily. When acute pain and blepharospasm are present, a 1% solution of atropine should be applied until the pupil is well dilated and the cornea is smooth. Cocaine is best avoided, as its anæsthetic power is transient, and its use may cause exfoliation of corneal epithelium. Judicious use of a 2% solution of argyrol and later of solutions of boric acid and zinc sulphate and adrenaline may be necessary when catarrhal conjunctivitis persists.

The respiratory tract should be treated by warm alkaline douching (not insufflation) of the nose three times a day. Inhalations of *Tinctura Benzoini Composita* with menthol should also be given. The laryngitis should be cured in two weeks. Occasionally a functional aphonia occurs which requires appropriate treatment.

Tracheitis is treated by inhalation from Burney Yeo's mask of menthol, iodine, creosote and eucalyptus.

For the treatment of the cyanosis of a secondary bronchopneumonia, venesection or oxygen may be necessary, but such treatment is never needed in the early stages of mustard gas poisoning. Treatment is along usual lines, and the bronchitis usually clears up in a month. The use of expectorants is best discontinued when sputum ceases to be mucopurulent.

The skin should be treated as follows. In erythema the skin is thoroughly cleansed with warm soapy water. This is followed by the application of evaporating lotions, "Anæsthesin", which has been found useful in allaying irritation when dusted lightly on skin, and sodium or potassium permanganate in 5% solution. In vesication, after the usual cleansing, the vesicles are cut away and the area is treated with 2.5% tannic acid solution. When the skin is dry and scaly after mustard burns the application of Lassar's paste is useful. Naturally, when burns are secondarily infected, moist dressings of eusol, magnesium sulphate *et cetera*, may be indicated. Picric and boric acid are best avoided on account of risk of absorption.

Patients should be discharged from hospital as early as possible and as soon as risk of infection is passed, or transferred to a suitable convalescent dépôt to obviate the mental and psychic effects of gassing.

Functional disorders, such as aphonia and blepharospasm, are of frequent occurrence. "D.A.H." or "effort syndrome" after gassing with mustard gas is not usually present to so great an extent as after

gassing with phosgene, particularly in the absence of bronchopneumonia. The appropriate treatment is by controlled graduated exercise.

### Lewisite.

Lewisite (chlorovinylchlorarsine), which has an odour of geranium, has not been used in chemical warfare. In addition to causing sensory irritation, it produces burns similar to those from mustard gas, and is classed among the vesicants. A Lewisite burn may give rise to systemic symptoms of arsenic poisoning. Otherwise the treatment of casualties follows that laid down under the heading of mustard gas.

### Phosgene, Chlorine and Chloropicrin.

The lung irritants, phosgene, chlorine and chloropicrin, all cause essentially the same type of pathological effect, which is most marked in the alveoli and smaller air passages; the main danger is the onset of pulmonary oedema. Later massive bronchopneumonia may be superadded. The condition may be either acute with rapid onset or acute with insidious onset. When the onset is acute, coughing, nausea, retching, pain in the chest and feeling of constriction occur. With the appearance of oedema, the characteristic familiar picture is presented—face, lips and ears become cyanosed, their colour deepening to the intense violet of full cyanosis. This is particularly noticeable with chlorine. With phosgene the cyanotic stage is often omitted, and the patient passes into a state of circulatory collapse, with feeble pulse, clammy skin and leaden colour. Whilst in the stage of cyanosis, whether "blue" or "grey", the patient is apprehensive of the seriousness of his condition. At this stage the casualties may be further subdivided into three groups: (i) mild case, in which occur reddish flush of face, rapid respiration, and pain in chest and epigastrium; (ii) severe case, characterized by "blue" cyanosis, distended neck veins, and a full pulse of 100; (iii) the severe case with collapse, in which the patient has "grey" cyanosis and a rapid thready pulse.

The more mildly affected patient is often drowsy and falls to sleep and awakens refreshed. Coughing, rawness in the throat and general debility may persist for some days, after which the patient becomes convalescent. During convalescence the pulse rate is often as slow as 45 to 50 per minute. It is of no significance, but rather an indication that the patient is beginning to convalesce.

Patients with severer cyanosis, if the colour does not deepen and the pulse rate does not exceed 100, tend to recover in a few days, and thereafter follow the course of the milder cases. The oedema fluid is usually absorbed by the fourth or fifth day. These patients may, however, pass into the grey or collapsed stage, particularly if subjected to any physical effort. Patients with the most severe form of "grey" cyanosis may recover with proper treatment, but the mortality is distressingly high, and recovery from the collapsed stage may be followed by bronchopneumonia. Should the patient last into

the third week after being gassed, he may be expected to survive the acute infection. Of the deaths due to phosgene and chlorine 81% occurred within twenty-four hours.

When the condition is acute and the onset insidious, symptoms as above may manifest themselves some hours after exposure to gas, particularly when such exposure is followed by exertion or the taking of a heavy meal. For this reason, therefore, it is essential that full inquiry be made into the history; such patients should be transported to hospital sitting or, preferably, lying down.

#### *Treatment.*

The treatment of conditions caused by lung irritants consists mainly in absolute rest in bed (in the most comfortable position), the application of warmth and treatment of shock generally, and also in the judicious use of oxygen.

Oxygen should be administered to all patients showing cyanosis. It is not necessary to warm the oxygen, which is best given by a Haldane apparatus or nasal tube. The minimal amount should be used (from two to ten litres per minute) which will serve to maintain the face pink. The administration of oxygen must be continued for one or two days and nights, with progressive lessening of the supply until recovery is assured and the patient does not relapse into cyanosis when the supply is intermittent.

Venesection is indicated in patients with deep cyanosis and full bounding pulse, but is contra-indicated in the pallid patient with small pulse.

As to drugs, brandy, pituitrin and caffeine have proved most beneficial, and also camphor. Digitalis and strychnine have not proved useful. Oxygen has proved to be the best cardiac stimulant. Morphine must be used with discretion and only when restlessness is extreme; doses of 0.011 gramme (grain one-sixth) should be given. Phenacetin is best avoided when headache is severe, as it is liable to cause collapse; the same objection does not apply to aspirin.

Relief of "oxygen want" is the best means of combating headaches.

Vomiting (salt water should be used, not apomorphine), posture and artificial respiration by Schafer's method are the most suitable means of getting rid of oedema fluid in the early stages if the condition warrants such measures. General stimulating treatment in convalescence and graduated exercises are, of course, necessary to combat post-gas debility and any possible neurosis.

#### *Sensory Irritants.*

With regard to the sensory irritants—arsenical smokes and tear gases—it is sufficient to remark that the respirators afford adequate protection. In sufficiently high concentration these sneezing and lachrymatory gases cause pulmonary complications; but usually the effects pass off within an hour or two after the patient leaves the gassed area. Simple eye bathing, nasal douching or inhalation of chloroform is usually sufficient treatment.

## Reports of Cases.

### TEAK DERMATITIS.

By L. H. GENGÉ,

Surgeon-Lieutenant, Royal Australian Navy,  
Garden Island.

A JOINER at Garden Island reported with a erythematous rash of both cubital fossæ and on the neck. Extreme irritation was present; this was worse at night. Oedema of the upper and lower lids of both eyes was present. The oedema lasted for one week and the rash persisted for three weeks.

Sawdust from teak was obtained and gently rubbed into cubital fossæ and within two hours the dermatitis reappeared. Instructions were issued that the patient should not work on teak.

After three months I decided to test again his reaction to teak. Within six hours of his commencing work on it, the dermatitis reappeared.

It is interesting to note that this man had been working on all types of wood, teak excluded, for twenty-one years, and had not suffered from any form of dermatitis. During the past five years he has been working at varying intervals on teak. The longest period was for four days. No rash appeared. The present condition appeared after he had been on teak for one month.

## Reviews.

### THE MEDICAL PRACTITIONER AND THE LAW.

"LEGAL PROBLEMS IN MEDICAL PRACTICE" is by D. Harcourt Kitchen, an English barrister.<sup>1</sup> The author has "tried to indicate to doctors something of the way in which the lawyer looks at their problems". He has done this with knowledge, sympathy and understanding.

His knowledge is evident throughout. He has, of course, actually seen doctors solving, or attempting to solve, some of these problems. This personal knowledge of his subject is especially evident in the chapters: "The Doctor's Duty as a Witness", "Expert Witnesses and Medical Reports", "The Doctor and the Witness Box". These chapters are important.

Sympathy and understanding appear in such passages as: "The doctor who is not used to the witness-box will probably be so frightened that as soon as his name is called he will forget any advice he may have memorized." The doctor who has to give evidence is advised to rid his evidence of technicalities by talking it over with a lay friend. "He could probably not find a better critic than his wife, unless she is also medical, for lay women are even more impatient of technicalities than lay men." And the doctor should be at hand when his evidence is required. If not, he will, amongst other things, be very unpopular with solicitors and counsel, "who are usually in an anxious state which the absence of a witness intensifies alarmingly".

The simple, direct style of writing has the advantages of lucidity and, when required, strength. Thus of the proper behaviour of a doctor under cross-examination: "Counsel is fighting for his side; the witness for the truth as he sees it. Therefore, although he must of necessity treat counsel as an opponent, he must not for one moment, from first to last, regard him as an enemy."

There is an original, at times striking, way of putting things. For example, of the intangible nature of the principal thing passed in the sale of a practice: "It is practically true to say that the purchaser takes, and the vendor sells, a potential interest in a number of psychological complexes belonging to various people

<sup>1</sup> "Legal Problems in Medical Practice", by D. H. Kitchen; 1936. London: Edward Arnold and Company. Demy 8vo, pp. 232. Price: 10s. 6d. net.

domiciled in the neighbourhood who are not concerned in the contract."

The scope of the work may be judged from its section-headings: "Personal Negligence", "Vicarious Negligence", "Libel and Slander", "Dichotomy", "The Medical Witness", "Who Owns an X-ray Film?" "The Patient Makes His Will", "Business Relations between Doctors". The work does not claim to be comprehensive. Mr. Kitchin modestly points out that he has covered only a fraction of the legal problems of medical practice. Nevertheless on the subjects he has chosen what he has to say is of interest and value.

The book is thoroughly practical. An illustration of this is afforded by the warning that a doctor should always, when treating an injury to bony parts, (a) advise a radiological examination, (b) if refused get a signed statement of refusal or write a letter stating the refusal, (c) note up in records. Although "this warning is continually broadcast by every defence society, professional organization and writer on medical law", yet, writes the author, "the annual reports of defence societies show that this warning continues to be necessary and I make no apology for repeating it". There is the form of consent to an operation in which the patient consents also to "such other or alternative operative measures as may be found to be necessary during the course of such operation". There is the advice to every member of a medical partnership to join a defence society to insure himself against the risk of having to pay damages for his partners' negligence. For "even if his partners are absolutely competent and trustworthy juries are not". And much more.

The cases taken as illustrations are invariably good. Tyndal v. Alcock, decided in 1927, is cited in reference to surgical malpractice, of which the author says: "The pitfalls in this branch of practice are so numerous that they can hardly be counted, and many of them cannot be avoided even by the most scrupulous care and the most exceptional skill." A little girl, a promising piano player, fell off a donkey and broke the lower end of her humerus. The defendant attended to the injury with the greatest care. For all that, Volkmann's ischaemic contracture set in and the arm was crippled. The doctor had to pay £2,000 to the child and £150 to her mother.

In Tyndal v. Alcock the jury had answered certain questions in such a way as to show that they did not think the defendant negligent, but thought the little girl should receive compensation. When told they could not award compensation unless they found the defendant negligent, they promptly found him negligent. The appeal was dismissed, Lord Justice Romer remarking, ironically of course, that the doctor must get what consolation he could from the thought that trial by jury was the foundation of his liberties!

A case tending in the opposite direction is Beatty v. Cullingworth. A nurse sued a surgeon for allegedly having removed her ovaries without her consent. There had been no express consent and it was by no means certain that any had been implied. Yet the jury found for the doctor and declared that the action should never have been brought.

Under "vicarious negligence" the matter of articles being left in the patient's body after an operation is considered. On such an occasion does it necessarily follow that the patient has a right of action at all? Observations by Lord Chief Justice Hewart in 1930 indicate that he has, although a South African case of 1929 expressly found that he has not. If the right does exist, against whom is it exercisable, the theatre-sister, the surgeon, or both? In the author's opinion "it seems doubtful whether an English Court will ever commit itself to an unconditional ruling that the surgeon at an operation can leave the counting of instruments and swabs entirely to the theatre-sister and be relieved of all responsibility".

The liability of the hospital is also discussed. It is pointed out that this liability is limited to providing reasonably adequate food, shelter, bedding *et cetera* and a competent medical and nursing staff. Moreover, when in the theatre the nurses and attendants are under the control of the operating surgeon and so cease to be servants

of the hospital so as to attach liability to it for anything they may do.

Nursing homes are in a different position. They profess to nurse, and often treat, the patient. The doctors, nurses and attendants are then agents of the home, which is liable for any act of negligence they may commit in the course of their employment.

It will have been seen that the book is worth more than notice. It deals in a most practical, interesting manner with many matters of considerable importance to the medical profession and is worth buying.

#### PROGRESS IN UROLOGY.

THE latest of the "Recent Advances" series deals with the progress made in genito-urinary surgery, and the authors, Hamilton Bailey and Norman M. Matheson, are to be congratulated on the presentation of the material and the comprehensive bibliography of the sections given at the end of each chapter.<sup>1</sup>

In no sense can the volume be regarded as a text-book, but rather as an addition to the more complete works on genito-urinary surgery. Most of the progress made in an ever progressing specialty is summarized and little fault can be found with the relative importance accorded the various aspects.

The principles and scope of excretion urography are described briefly, whilst the modern treatment of non-obstructive anuria by intravenous sodium sulphate is given in some detail. In the discussions on urinary antiseptics and urinary infections the work of M. L. Rosenheim on mandelic acid therapy is considered, together with other forms of medication. A word of warning might have been sounded against the all too prevalent practice of assuming that the mechanical factors of obstruction and stasis may be ignored and that a long course of treatment by medicines may be ordered when a routine urological investigation would reveal the *fons et origo mali* to be a stone or ureteral kink, or even a stricture.

Hydronephrosis is dealt with briefly, but undue importance is given to a consideration of the plastic operations to the exclusion of the principle of renal counterbalance, which in the opinion of American schools at least, negatives the theoretical benefits to be gained by conservative treatment of unilateral lesions.

The modern conception of urinary lithiasis in having systemic disease as its underlying basis and the researches by McCarrison, Higgins and Keyser amongst others are described and a full list of references is given. The value of nephrostomy as an adjuvant to nephrolithotomy is stressed in treatment. Learmonth's work on the pre-sacral nerve and the teaching and practice of Caffey in ureteral implantation are dealt with precisely and, in a book of this type, adequately.

Carcinoma of the bladder and prostate are admittedly "therapeutically difficult", and the best that surgery can offer in most cases makes dismal recording. The various methods of transurethral attack on bladder neck obstruction are described and the authors conclude the discussion by the statement that "in the absence of general contraindications, prostatectomy is still the operation of election in the great majority of well defined adenomata".

Harris's operation of prostatectomy is described in detail with minor modifications. Advances in the surgery of the seminal vesicles, the urethra, and the scrotum, together with the endocrine therapy in undescended testis and calcium treatment of acute epididymo-orchitis, are dealt with in a manner that should prove helpful to all practitioners.

Generally speaking the publication may be commended for the wealth of information it contains, most of which will be useful at some time to the general practitioner and all of which should be digested and understood by urologists and surgeons.

<sup>1</sup>"Recent Advances in Genito-Urinary Surgery", by H. Bailey, F.R.C.S., and N. M. Matheson, M.B., F.R.C.S., M.R.C.P.; 1936, London: J. and A. Churchill Limited. Demy 8vo, pp. 221, with illustrations. Price: 15s. net.

## The Medical Journal of Australia

SATURDAY, JANUARY 2, 1937.

All articles submitted for publication in this journal should be typed with double or treble spacing. Carbon copies should not be sent. Authors are requested to avoid the use of abbreviations and not to underline either words or phrases.

References to articles and books should be carefully checked. In a reference the following information should be given without abbreviation: Initials of author, surname of author, full title of article, name of journal, volume, full date (month, day and year), number of the first page of the article. If a reference is made to an abstract of a paper, the name of the original journal, together with that of the journal in which the abstract has appeared, should be given with full date in each instance.

Authors who are not accustomed to preparing drawings or photographic prints for reproduction, are invited to seek the advice of the Editor.

### THE NEW HOSPITAL ACT IN QUEENSLAND.

THE Queensland Parliament has recently adopted an extraordinary and far-reaching piece of legislation. The new measure is known as *The Hospitals Act of 1936*, and has been brought into being "to make better provision for the treatment of the sick, and for the provision, control, and management of the various organisations relating thereto and for other purposes". It takes the place of *The Hospitals Acts 1923 to 1932*, which are by its provisions repealed.

The most important part of the act has to do with the formation of hospital boards and districts. The Governor-in-Council has power to constitute districts for the purposes of the act, to abolish districts, to transfer an area or areas from one district to another, and "to transfer to and vest in the Board of such district any organisation for the treatment of the sick in any such Area or Areas or part or parts of any such Area or Areas". Details of the constitution of boards are, of course, given; and the method of election of members is set out. The chairman of a board is to be appointed by the Governor-in-Council. The chairman, who may be paid an allowance from the general fund, has wide

powers. He may "at any time suspend from office any officer who in his opinion is guilty of misconduct or neglect, and may if necessary temporarily appoint another officer in his place". The board is to prepare each year a budget, and when the estimated income from all sources of the board, other than income from government and local authority sources, is less than the estimated expenditure, the difference as shown in the budget is to be paid by the government and local authorities in the proportion of 60% and 40%. It is to be noted that the Governor-in-Council may on the recommendation of the Public Service Commissioner appoint an inspector-general of hospitals. The duties of this officer will include the making of inquiries into the administration and management of hospital boards and committees at least once a year. He may also, at the request of the minister, make other inquiries or discharge other duties in relation to hospitals to which the act applies, and whether hospitals are within a district or are voluntary hospitals.

The function of hospital boards is to be "the treatment of the sick". The following is a *verbatim* copy of the section dealing with this question, taken from the bill, which was adopted practically without amendment:

The Board shall be charged with doing and executing such function and with the good rule and government of the district in relation to such function, and shall have the control of the working and business of such good rule and government.

The function of the treatment of the sick shall, but without limit to its generality, include and be deemed to include the provision and maintenance by the Board of an organisation for the efficient treatment of the sick, and the carrying-on and co-ordination of such organisation, and the doing and executing by the Board of all acts, matters, and things determined by it to be necessary for or incidental or ancillary to the efficient and proper treatment of the sick, and the prevention and/or mitigation of sickness, and the carrying-out and co-ordination of such treatment and such prevention and/or mitigation.

The Board shall in relation to such function have and possess and shall do and execute all the powers, rights, privileges and authorities and be subject to all the liabilities, duties, obligations and responsibilities conferred or imposed by this Act.

The term "treatment of the sick" shall, but without limiting the generality of its meaning, include and be deemed to include all forms and methods of treatment of the sick, including maternity and obstetrics and motherhood, and child welfare, dentistry, optometry, and such

other treatment, acts, matters, and things as may be designed or intended to prevent or mitigate sickness, and ambulance transport, and other transport services.

(2) Without limiting the generality of its powers and authorities in relation to the function of the treatment of the sick, the Board shall have full power and authority to take any land, and shall have and possess and may exercise and perform express powers and authorities (including the power to make by-laws) in relation to the following matters, that is to say, the undertaking, provision, acquiring, construction, maintenance, management, regulation, carrying-on, and/or regulation of the use of—

- (i) An organisation;
- (ii) Buildings, plant, equipment, and furnishings;
- (iii) Ambulance transport and/or other transport services;
- (iv) Generally all and any matters and things which the Board may deem necessary for or incidental or ancillary to the efficient treatment of the sick and/or the prevention and/or mitigation of sickness.

(3) The power and authority conferred upon the Board under and in pursuance of this section shall include and be deemed to include power and authority to abolish or close any service, matter, or thing which, in the opinion of the Board, is no longer necessary or required, or to transfer any service, matter or thing to some other place in the district, which in the opinion of the Board is more convenient.

Honorary medical officers hold their appointments subject to the condition that the tenure of appointment and/or contract of service is at the pleasure of the board, or committee, or other governing body of the hospital, and the governing body may in its absolute discretion terminate such appointment and/or contract of service at any time it thinks fit. In such an event the medical officer has no redress.

There is in this act much to which no objection can be taken, and the Government, having control of hospitals, can of course determine how hospital boards should be constituted. It is with the function of the boards that the members of the medical profession and of the community generally are most concerned. The proposed inspector-general of hospitals will, it is understood, not be a medical practitioner. There is no provision for the appointment of medical practitioners to hospital boards, and yet these boards are charged with the treatment of the sick. Most members of the community are under the impression that the treatment of the sick is in the hands of those who have studied disease, and who have satisfied certain requirements set out in

the medical acts of the State. If a member of the Queensland Parliament finds that something is seriously wrong with his motor car, he does not take it to a veterinary surgeon, to an insurance broker, to a vendor of tea or to a disposer of sugar; he takes it to an expert motor mechanic. We cannot believe that members of parliament would submit their own bodies, which, like those of other people, are much more delicate in fashion and function than any motor car engine, even to the type of person likely to be appointed to hospital boards. We must conclude that the hospital boards are to exercise control over and sit in judgement on the treatment given to patients by medical practitioners. Apart from the absurdity of allowing lay persons to adjudicate on medical matters, no patient will in these circumstances feel sure that his or her clinical history is safe from the prying eyes of lay persons—the confidence that exists between medical attendant and patient is destroyed. We are convinced that the proposed arrangement is not in the best interests of the patient, and further that the people of Queensland will not countenance even the potential weakening of the confidential relationships that exist between them and their doctors. The function of the boards goes much further than interference with the patient in this fashion. The boards have power to disband any organization the income of which may be useful to hospitals. Friendly societies and other organizations that exist for the mutual help of members, hospitals conducted by religious and other bodies may all be cast into the common melting pot. The whole thing savours too much of the dragooning of platoons of people that they may be treated in the mass by methods which deprive them of their individual rights. The Australian is much too individual a person for that kind of thing. Like everyone else, he prefers to choose his own medical attendant, and, as far as is possible in hospital practice, he should be allowed to do so. In conclusion we would state that if the conduct of hospital medical officers or their treatment of patients is called in question, inquiry should be made by a board with the Director-General of Health as chairman, and including in its membership several

medical practitioners of integrity and repute. While the members of the medical profession in Queensland cannot approve of this kind of experimental legislation, they should not allow any perturbation they may feel to interfere with the faithful carrying out of their duty to the public in the treatment of disease. The more faithful medical practitioners are in their everyday work, the more ridiculous will inquiry boards of lay persons appear.

### Current Comment.

#### THE PREVENTION OF PUERPERAL SEPSIS.

In the United Kingdom, casualties from infection represent nearly 50% of the total deaths directly associated with child-bearing, if those due to abortion are included; and, in addition, infection is responsible for a large amount of serious non-fatal illness. The devastating epidemics of former times have practically disappeared, but smaller epidemics still occur. An excellent summary of the present state of knowledge of the cause and prevention of puerperal sepsis is contained in a recent communication by Leonard Colebrook.<sup>1</sup> Colebrook divides puerperal infections into two categories: first, those which are associated with injury to the maternal tissues during the process of child-birth, and, secondly, those cases in which child-birth has been accompanied by little or no trauma and the ensuing puerperal fever is attributable to one incident, namely, the arrival of the hæmolytic streptococcus in the genital tract of the mother. He considers that the data we now have make the advent of the infection from outside the genital tract almost as certain as anything in medicine. The all-important corollary to this is that most of these infections by the hæmolytic streptococcus could be prevented if their prevention were sought in the right way. If transfer of the hæmolytic streptococcus by way of the blood stream from the mother's throat or elsewhere was a common source of puerperal infections, these infections would be quite beyond control, and no large maternity institution would be free from them. As it is, careful inquiry into the records of three hospitals in London has satisfied Colebrook that this almost complete elimination of hæmolytic streptococcal infection is being achieved.

The danger of invasion by hæmolytic streptococci threatens the pregnant woman not from one source, but from many. Such sources occur in tonsillitis and scarlet fever, *otitis media* and mastoid disease, erysipelas, nasal sinus infection, wound infections of all kinds, burns, whitlow, quite trivial finger

infections and impetigo. Also symptoms resembling those of the common cold or so-called influenza may sometimes be associated with streptococcal infection. Further, about 7% of the population are throat or nose carriers of potentially virulent hæmolytic streptococci. Colebrook considers that the hæmolytic streptococci of the respiratory tract constitute the chief menace in maternity work. He adds that we must also be on guard against infection conveyed directly and indirectly from some other septic focus; at times perhaps by the agency of air-borne particles or dust. Complete security can be attained only by making the parturient woman immune to the risk of infection by hæmolytic streptococci. Until this ideal is attainable, an effort must be made to prevent the access of the streptococcus to the woman in labour.

Colebrook's recommendations come under two headings, namely, administrative reforms and reforms in the conduct of labour. Under the former heading he outlines a carefully thought-out plan for preventing the exposure of any parturient woman to the risk of infection. He advocates, first, the prompt examination of throat and nose swabs from all midwifery attendants—doctors, nurses and midwives—who develop tonsillitis or the minor degrees of sore throat, laryngitis, nasal sinus or middle ear infection; secondly, the immediate recognition of puerperal infection by examination of swabs from the upper part of the vagina or cervix, followed by examination of all possible sources of infection in the mother and her attendants; and, thirdly, the prompt removal of every infective patient from maternity institutions unless these are provided with a separate isolation block. "Further", he writes, "the problem calls for some organization of bacteriological services—in fact, a puerperal fever prevention service. What has been done for diphtheria and venereal disease can surely be done also for these costly streptococcal infections."

Colebrook's second set of suggestions, namely, those dealing with the conduct of labour, should be read by every doctor, however careful, and by every nurse, however experienced. He regards the wearing of masks as an entirely reasonable and valuable precaution, but adds that a mask can be a danger if it is used by an unintelligent, careless person. The use of "Dettol", especially in the form of a 30% cream, has, he considers, justified the claims put forward for this antiseptic. Colebrook's valuable and practical suggestions cannot be repeated here in detail. He concludes with the wise remark that in all routine the most important thing is the personal factor. With all our regulations and precautions we shall not get rid of the occasional disasters unless we can count upon a high standard of intelligent vigilance and conscientious work. Colebrook looks forward to the time when those comprising every maternity unit will keep a conscientious record of all its hæmolytic streptococcal infections, and will be dissatisfied if there is more than one of these among every 500 "booked" patients delivered in the institution.

<sup>1</sup>The Journal of Obstetrics and Gynaecology of the British Empire, Volume XLIII, Number 4, 1936.

## Abstracts from Current Medical Literature.

### PÆDIATRICS.

#### Acute Laryngo-Tracheitis in Children.

W. JEWELL SMITH (*Archives of Otolaryngology*, April, 1936) gives the result of study of forty-three cases of laryngo-tracheitis in children which occurred at the Children's Hospital, Los Angeles, in epidemic form during the fall and winter of 1933-1934. Acute non-diphtheritic laryngo-tracheitis in infants and children may occur in epidemic form. The pathological process is found principally in the subglottic tissues. This is because in the infant and the small child there is a predominance of loose areolar tissue that allows swelling to occur and to shut off the airway. The findings in cases of severe involvement are those of air hunger, namely, retraction and restlessness. The condition calls for immediate action, and surgical intervention should not be delayed. Provision must be made for post-operative treatment. In this series of forty-three patients, twelve, or 27.9%, required surgical intervention in the form of tracheotomy. Of the twelve so treated, four died—for the entire series a mortality of 9.3%.

#### Hæmaturia Complicating Ear, Nose and Throat Infections.

MORRIS A. WEINSTEIN (*Archives of Pediatrics*, August, 1936) points out that the specific impairment of the kidney structure and its function in relation to upper respiratory disease has received little attention until quite recently, and then principally by the French school. Very little has been known of the effect which acute otitis exercises on the hæmopoietic system. This lack of knowledge may be due to the fact that we are not always able to determine from the history of a particular infection of the ear, nose or throat associated with hæmaturia, which is the primary disease and which the secondary. Without a reliable case history, the basis for any sound deduction is lacking. The author gives case reports of ten patients with hemorrhagic nephritis (acute glomerular nephritis and focal nephritis). There is undoubted justification for assuming that acute infections of the ear, nose and throat have a direct influence on the kidney structure and its function. The non-streptococcal infections do less damage and are pathologically, anatomically and clinically different from the streptococcal group. The lesions are mainly detected microscopically, and are the result of a bacteriæmia. The streptococcal type of infection injures the kidney substance more or less seriously, and the lesions are diffuse, and due to toxins. Clinically they run a more severe and protracted course, and while they generally end in recovery, may lead to a

chronic kidney disturbance. Both groups owe their origin to an infectious disease, give a good prognosis, and may end in full recovery when the distant causative focus is removed.

#### Repeated Colds in Children.

CHARLES GILMORE KERLEY (*Archives of Pediatrics*, September, 1936) states that among the acute ailments of childhood there is none that possesses greater potentials for dangerous complications than repeated colds. An examination was made of 504 children with a history of repeated colds independent of associated illness. The object was to concentrate on the question of repeated colds, and those patients who showed associated illness of any nature, such as tuberculosis, unresolved pneumonia, bronchiectasis, chronic adenitis, hay fever or asthma, were excluded. Three hundred and eighty of the patients (75.4%) showed radiographic evidence of accessory sinus disease, and from 252 of these the tonsils and adenoids had been removed. Of outstanding importance as regards the etiology of the repeated cold is the finding that a very high percentage of the children showed definite pathological changes of the upper respiratory tract. Regardless of the nature of the infecting agency of the common cold, whether a filtrable virus or otherwise, the best insurance against infection in children is a normal upper respiratory system. Second in importance is a high degree of physical resistance developed through properly adjusted life habits based upon a study in detail of each individual.

#### Pneumonia in Children.

HUGH C. THOMPSON (*Archives of Pediatrics*, August, 1936) has reviewed the cases of pneumonia occurring in the paediatric clinic in the Albany Hospital during the past six years. As is well known, pneumonia in children differs considerably from that seen in adults, both in type, symptoms and prognosis. It is, further, one of the major conditions treated in hospital practice, and in the last few years general interest has been aroused in the possibilities of serum therapy. In the series under observation 245 were classified as bronchopneumonia and 101 as pneumonia of the lobar type. The mortality of the series was 20%. Half the deaths occurred in cases of bronchopneumonia during the first year of life. After the first two years of life, and certainly after the first four, pneumonia in children is a relatively non-fatal disease. Treatment should be mainly supportive. The use of anti-pneumococcus serum in children does not seem to be warranted at the present time.

#### Cough in Childhood.

CHARLES MCNEIL (*Edinburgh Medical Journal*, October, 1936) discusses the character of the cough in respiratory disease, both chronic and acute, in children. The cough in chronic nasal and pharyngeal catarrh, a very common condition, often accompanied

by enlarged tonsils and adenoids, is not a noticeable symptom, at any rate during the day-time. Its secondary effects, resulting in the continual swallowing of infected mucus, nearly always result in a secondary dyspepsia, which may be severe and serious, with anorexia, malnutrition, anæmia and nervous symptoms. In every case of chronic dyspepsia in young children it is important to examine the fauces and pharynx and to remember that pharyngeal catarrh may be the primary cause of the dyspeptic condition. In bronchiectasis the cough is characteristic. It occurs in severe paroxysms, most often in the early morning when the child awakens from sleep and sits up. The cough is unproductive at first, but violent, and as coughing proceeds the paroxysm ends with the discharge of sputum into the mouth and spitting out. The sputum is seldom foetid in children, though not uncommonly streaked with a little blood. Cough is not an important symptom in pulmonary tuberculosis in the child. Tuberculosis of the lungs is, however, often the first possibility raised in the mind of the clinician examining a child who is thin and who has a chronic cough. This association of chronic cough and malnutrition is met with in chronic pharyngeal catarrh and in bronchiectasis far more frequently than in tuberculous disease. Two procedures are required to pick out the few tuberculous patients from the number of young children who cough. The first is the performance of the von Pirquet or Mantoux test. If a positive reaction is obtained, a diagnosis of tuberculosis becomes possible and the sputum must be obtained and examined for bacilli. This is best done by gastric lavage or examination of the stool. In regard to acute respiratory disease, cough is usually a minor and unobtrusive symptom in lobar pneumonia, but a prominent and early symptom in bronchopneumonia.

### ORTHOPÆDIC SURGERY.

#### Spondylolisthesis.

W. MERCER (*Edinburgh Medical Journal*, September, 1936) discusses the causation and embryology and operative treatment of spondylolisthesis. Of the patients with this condition seen at the Mayo Clinic between 1918 and 1931 71% were males. The condition is a gradual displacement forwards either of the rest of the vertebral column in relation to the fifth lumbar vertebra, sacrum and pelvis, or of the whole vertebral column in relation to the sacrum and pelvis. The displacement varies from a slight malposition to a rotation of the vertebra through 90° on a transverse axis. In his description the author excludes cases resulting from acute trauma, tuberculosis or disease. He conforms to the opinion of recent observers that it arises primarily from a congenital cleft in the laminae of the neural arch, whether the onset is

sudden or insidious. He describes the process of ossification of the vertebrae and points out that the fifth lumbar vertebra may have two primary centres in each half of the arch, and where ossification is deficient the posterior part of the arch comprising the spine, laminae and inferior articular processes is united with the rest of the bone only by hyaline cartilage. Although this anomaly is most common in the lumbar region, it has been described in the first sacral vertebra by Sandfort and in the cervical and dorsal regions by Neugebauer. Willis found a separate neural arch in more than 5% of 1,520 human skeletons that he dissected. As a result of his research he describes a single centre of ossification appearing in each half of the neural arch at the seventh or eighth week near the base of the superior articular process and appearing first in the cervical portion of the column. This fuses with the centrum about the fourth or fifth year and extends backwards to the transverse process, lamina and spinous process, interruption of which latter fusion results in *spina bifida*. He decides that this defect is an anomaly peculiar to the lumbar region and is usually confined to the last presacral vertebra. There is in persons who are the subjects of spondylolisthesis a period in which there is no dislocation, but in which one or more contributory factors may at any time produce deformity. Mercer considers that the explanation of spondylolisthesis lies in a combination of congenital and traumatic factors. The union of the centrum and arch begins in the neck, spreads downwards and is complete in all regions in the sixth or seventh year and in most cases the two centres in the arch have fused about the tenth year. Natural arrest of the displacement is favoured by several factors including tension in the ilio-lumbar ligaments, the tendency of the pelvis to assume a more vertical position by rotation on its transverse axis and proliferation of bone on the anterior surface of the sacrum forming a buttress to support the fifth lumbar vertebra. The author describes the signs and symptoms of the condition and gives details of an operation designed to relieve it.

#### Bone Metabolism.

BRUCE GILL AND IRWIN STEIN (*The Journal of Bone and Joint Surgery*, October, 1936) describe the application of advances in the knowledge of bone metabolism to orthopaedic surgery. They point out that bone is a tissue that is highly sensitive to local conditions, such as injury and infection, which may affect its normal blood supply and nutrition, and that it reacts promptly to many conditions such as malnutrition and anaemia which affect the general metabolism of the body. The elements necessary for its normal metabolism include an adequate supply of magnesium, calcium and phosphorus, the two last-mentioned elements being present in the serum as a saturated solution in a

balanced ratio of ten to four. Normal plasma calcium concentration depends primarily on four factors: an adequate supply of calcium in the food, the hydrogen ion concentration of the intestinal contents, the presence of phosphorus and magnesium and an adequate supply of vitamin D. The optimal absorption of calcium is attained by a dietary ratio of approximately three parts of calcium to five parts of phosphorus, as an excess of either element leads to the formation of insoluble compounds which are thrown off in the faeces. Acidity of the intestinal contents aids in the absorption which also is assisted by vitamin D, even in the presence of an unbalanced diet and in the absence of intestinal acidity. The relation of normal concentration of calcium and phosphorus in the blood to muscle tone and nerve irritability is well known, and the level of this concentration is controlled by vitamin D and secretions of the ductless glands, particularly of the parathyroid. These two factors have an antagonistic influence. Vitamin D, when insufficiently opposed by parathormone, tends to raise the blood phosphorus and blood calcium, but parathormone insufficiently opposed by vitamin D lowers the blood phosphorus and thus by their combined activity they maintain a normal blood concentration of calcium and phosphorus, the solubility of these two elements being associated with the presence of magnesium. Bone metabolism is also influenced by the following local factors: the hydrogen ion concentration and the carbon dioxide tension of the plasma; the presence of substances, such as proteins and the salts of magnesium, which influence the solubility of calcium phosphate, and enzymes such as phosphatase. Alteration in the local blood supply, such as occurs in injury, infections and toxæmias may affect these factors. It is possible that magnesium is an activator of the phosphatase which is thought to be synthesized by cartilage cell and osteoblasts. The authors discuss the disturbances of calcium and phosphorus metabolism in various diseases of bone and express the view that the symptom complex of *osteitis fibrosa cystica generalisata* results from hypersecretion of the parathyroid gland. The effect of parathormone seems to be an increased solubility of calcium phosphate in the blood, resulting in a decalcification; whereas in conditions of hypothyroidism owing to the decreased output of urine there is an inability to excrete excess phosphorus which unites with cations of calcium, strontium and magnesium and is excreted through the colon, resulting in a lowered blood calcium and a high phosphorus content. Administration of sodium chloride increases the solubility of sodium phosphate in the urine. Ingestion of calcium speeds up the elimination of phosphorus in the faeces. Ingestion of parathormone increases the amount of urine and the solubility of calcium and phosphorus and the

administration of magnesium may also control the manifestations of tetany. Hyperparathyroidism may be treated by parathyroidectomy or irradiation, but the symptoms may be controlled by diet alone. Administration of dicalcium phosphate together with large amounts of vitamin D is the most suitable method of treatment, and there appears to be no danger of producing metastatic decalcification under this régime. The authors advise a diet low in calcium, low in phosphorus and high in magnesium in the treatment of Paget's disease and enumerate the foods available for this diet.

#### Hæmatogenous Acute Osteomyelitis in Children.

J. WILSON AND F. M. McKEEVER (*The Journal of Bone and Joint Surgery*, April, 1936) review the records of 110 patients suffering from hæmatogenous acute osteomyelitis admitted to the orthopaedic department of the Children's Hospital at Los Angeles between June, 1928, and June, 1934. They classified the types of the patients' conditions into four groups: (i) multiple diffuse type, 34 cases; (ii) single diffuse type, 64 cases; (iii) circumscribed type, Brodie's abscess, 8 cases; (iv) sclerosing osteomyelitis, 4 cases. They made an effort to determine the effect upon these patients of early and late operations with regard to the mortality and development of secondary foci. There were no fatalities in Groups 3 and 4. Of patients in Groups 1 and 2 12% died and these had been treated surgically at varying periods in the course of the disease, six within the first week, three during the second week and three between the sixteenth and twenty-third day. Six patients died within the first week and five of these within the first twenty-four hours after operation. Two died during the second, three within the next eight days and one in two hundred and twenty days. Of those patients who were submitted to drainage of the medullary canal at the site of the bone infection within the first seven days of the disease, 25% died. Of those in whom surgical drainage was carried out during the period from the seventh to the twenty-eighth day of the disease, and who were all as acutely and desperately ill as those who were admitted to early drainage, the mortality dropped to 9.7%. The lowest mortality was in the group comprising the patients in whom the abscesses drained spontaneously and the authors are of the opinion that this so-called dilatatory treatment in many instances saved the lives of some of these patients. They suggest that a well-timed adequate drainage of the medullary canal when the individual's resistance is at the highest possible point represents a solution to the problem of osteomyelitis and avoids some of the catastrophes which result from a too early surgical drainage of infected bone. On the other hand, it seems wise to drain abscesses to avoid the formation of multiple metastatic lesions.

## British Medical Association News.

### ANNUAL MEETING.

THE annual meeting of the Queensland Branch of the British Medical Association was held at the B.M.A. Building, Adelaide Street, Brisbane, on December 12, 1936, Dr. M. GRAHAM SUTTON, the President, in the chair.

The President extended a welcome to the Editor of THE MEDICAL JOURNAL OF AUSTRALIA, who had come to Brisbane to attend the annual meeting of the Branch in order that he might gain some first-hand information of the problems confronting the members of the medical profession in Queensland.

### ANNUAL REPORT OF COUNCIL.

The annual report of the Council, which had been circulated amongst members, was taken as read on the motion of Dr. A. V. Meehan, seconded by Dr. Alex. Murphy, and was adopted on the motion of Dr. W. N. Robertson, seconded by Dr. R. Graham Brown. The annual report is as follows:

The Council has pleasure in presenting the following report of the work of the Branch for the year ended November 15, 1936.

### Membership.

The membership of the Branch is 509, as against 491 in 1935. The additions have included: Elections of new members, 18; transfers from other Branches, 24; members re-elected, 4; members reinstated upon payment of arrears of subscription, 3.

The losses have been due to: transfers to other Branches, 14; resignation, 1; default in payment of subscription, 8; deceased, 8.

The Council regrets to record the death of the following members: Dr. N. A. A. Trenow, Dr. J. J. Stanley, Dr. D. F. Barrett, Dr. G. E. M. Stuart, Dr. H. de Pinna, Dr. Leonard Redmond, Dr. J. P. O'Hara, and Dr. Robert Wallace, senior.

### Meetings.

#### General.

In addition to the annual general meeting, nine ordinary meetings of the Branch were held, of which one was a clinical meeting. The average attendance at the ordinary Branch meetings was 27.

#### Council.

Twenty-one ordinary meetings and two special meetings were held by the Council. The special meetings were held, one to discuss the position at the Innisfail Hospital, the other to discuss the position of the British Medical Association Contract Medical Service, Toowoomba.

The record of attendance of members of the Council was as follows:

	Ordinary.	Special.
Dr. M. Graham Sutton (President) ..	20	2
Dr. T. A. Price (President-Elect and Federal Council Representative) ..	21	2
Dr. W. N. Robertson (Past-President) ..	12	—
Dr. L. W. N. Gibson (Honorary Secretary)	17	2
Dr. Ellis Murphy (Assistant Honorary Secretary) ..	16	2
Dr. R. G. Quinn (Honorary Treasurer) ..	18	2
Dr. N. W. Markwell <sup>1</sup> (Chairman of Committees) ..	19	2
Dr. Neville Sutton (Honorary Librarian)	12	—
Dr. D. Gifford Croll <sup>2</sup> (Federal Council Representative and Councillor) ..	14	1

<sup>1</sup> On leave two meetings.

<sup>2</sup> On sick leave five meetings.

Dr. K. B. Fraser (Councillor) ..	16	1
Dr. Noel M. Gutteridge <sup>3</sup> (Councillor) ..	8	1
Dr. Basil L. Hart (Councillor) ..	16	1
Dr. F. W. R. Lukin (Councillor) ..	13	1
Dr. S. F. McDonald (Councillor) ..	15	1
Dr. Bruce Mayes <sup>4</sup> (Councillor) ..	3	—
Dr. Alex. Murphy (Councillor) ..	16	2
Dr. J. G. Wagner (Councillor) ..	17	1
Dr. C. E. Wassell <sup>1</sup> (Councillor) ..	18	1
Dr. Kenneth Wilson (Councillor) ..	16	1

### Scientific Meetings.

February.—Clinical meeting, combined with the Clinical Society of the Hospital for Sick Children.

March.—Dr. A. V. Meehan: "Some Impressions of Orthopaedic Surgery Abroad."

April.—Papers given by the Surgical Section on "A Discussion on Aspects of Abdominal Adhesions": (1) Introduction, Dr. L. M. McKillop, "Treatment of Peritoneal Adhesions"; (2) "Descriptions of Conditions of Adhesions in the Patient", by Dr. J. Cameron Hemsley, Dr. G. W. Macartney and Dr. Milton Geaney.

May.—Combined meeting of the Branch and the Australian Dental Association, Queensland Branch. Papers were given by Dr. P. A. Earnshaw ("Diet in Relation to Dental Disease") and Dr. P. H. Rheuben ("The Dental Concept of Oral Infection").

June.—Joseph Bancroft Memorial Lecture, delivered by Professor Harold R. Dew: "Some Aspects of Neurosurgery."

July.—Papers given by the Obstetrical Section on "Gonorrhœa in the Female": (1) Gonorrhœa in Children, Dr. S. Julius; (2) Gonorrhœa—Out-patient Adult Females, Dr. Beatrice Warner; (3) Gonorrhœa—In-patient Adult Females, Dr. Kenneth Wilson.

August.—Professor H. J. Wilkinson: "An Informal Talk on the New Medical School."

September.—Jackson Lecture, delivered by Dr. A. H. Marks: "A Review of Midwifery Instruments since Paré."

November.—Paper arranged by the Medical Section. Dr. Alex. Murphy: "Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis."

The following is the personnel of the committee responsible for the arrangement of the programme of papers: Dr. Basil L. Hart, Dr. J. G. Wagner and the *ex officio* members of the Council.

On October 22 a lecture was given by Professor Winifred Cullis, C.B.E., M.A. (Cantab.), D.Sc. (London), LL.D. (Baltimore), Sophia Jex Blake Professor of Physiology in the University of London, and Professor of Physiology in the London School of Medicine for Women, on the subject of "Fatigue and its Prevention." In addition to members of the Branch, invitations were issued to the professors and lecturers of the University of Queensland, the medical students, and members of the Royal Society of Queensland. The lecture proved to be most interesting and instructive, and was greatly appreciated by all who heard it.

*The Royal Australasian College of Surgeons.*—Members of the Branch were invited to attend a lecture given in connexion with the annual meeting of the Queensland Section of the Royal Australasian College of Surgeons on Friday, August 14, 1936, when a paper was delivered by Professor H. J. Wilkinson, M.D., on "Abdominal Pain".

### Office-Bearers.

Dr. Thos. A. Price was elected President-Elect, and Dr. L. W. N. Gibson was reelected Honorary Secretary.

The following office-bearers were elected by the Council:

*Assistant Honorary Secretary:* Dr. Ellis Murphy.

*Honorary Treasurer:* Dr. R. G. Quinn.

*Chairman of Committees:* Dr. N. W. Markwell.

*Honorary Librarian and Curator of the Museum:* Dr. Neville G. Sutton.

<sup>3</sup> Elected June 26, 1936.

<sup>4</sup> Resigned June 26, 1936.

<sup>5</sup> On leave two meetings.

**Councillors.**

It is with regret we report that Dr. W. N. Robertson, Dr. Alex. Murphy, Dr. Kenneth Wilson and Dr. F. W. R. Lukin, who have been associated with the Council in executive positions for a number of years, are not seeking reelection for the ensuing year. The Council desires to place on record its sincere appreciation of the valuable services which these members have rendered to the Branch.

With reference to Dr. Robertson, his record of service to the Branch extends over a period of very many years. He has been President on four occasions—1905, 1916, 1917 and 1935—and it is impossible to estimate what the Branch really owes to him. Dr. Robertson has always been ready to make any sacrifice for the benefit of the Branch, and we feel sure that, although he is severing his connexion as an active member of the Council, his advice and experience will always be available when sought, as he is very jealous of "the honour and interests" of the medical profession.

**Ethics Committee.**

The following were elected members of the Ethics Committee at the annual meeting of the Branch held on December 13, 1935: Dr. Alex. H. Marks, Dr. Mervyn S. Patterson, Dr. G. P. Dixon, Dr. Gavin H. Cameron and Dr. G. W. Macartney.

No matters have been referred to the Ethics Committee during the year, and consequently no meetings were held.

**Library.**

During the year the only books added to the library were two volumes of the "History of St. Bartholomew's Hospital", which we had the opportunity of purchasing at a reduced price.

We have supplied the Medical School of the University with a list of periodicals to which the Branch subscribes, and it is likely that they will concentrate on journals which are not in our library.

**Representation.**

During the year the Branch was represented as follows:

*Council of the British Medical Association:* Professor R. J. A. Berry.

*Representative Body:* Dr. J. V. Duhig (Representative), Dr. E. W. Kerr Scott (Deputy Representative).

*Federal Council of the British Medical Association in Australia:* Dr. D. Gifford Croll and Dr. T. A. Price. *Australasian Medical Publishing Company, Limited:* Dr. D. Gifford Croll.

*Medical Officers' Relief Fund (Federal):* Dr. W. N. Robertson, Dr. D. Gifford Croll and Dr. J. Cameron Hemsley.

*Queensland Cancer Trust:* Dr. B. L. W. Clarke and Dr. Clive Uhr.

*Queensland Committee of the Advisory Council on Nutrition:* Dr. P. A. Earnshaw and Dr. Noel M. Gutteridge.

*Queensland Bush Nursing Association:* Dr. N. W. Markwell.

*Animal Health Board:* Dr. D. Gifford Croll.

*Standards Association of Australia:* Dr. W. N. Robertson and Dr. E. O. Marks.

*Queensland Medical Board:* Dr. Alex. Murphy, Dr. Mervyn Patterson and Dr. Kenneth Wilson.

*Australian Conference on Crippled Children:* Dr. Harold Crawford.

*Seventh Australian Cancer Conference:* Dr. B. L. W. Clarke.

The Editor of THE MEDICAL JOURNAL OF AUSTRALIA was represented by Dr. Joyce Stobo.

**Sub-Committees.****Hospital.**

*Personnel:* Dr. Neville Sutton, Dr. C. E. Wassell, Dr. J. G. Wagner, Dr. F. W. R. Lukin, and the *ex officio* members of the Council.

Fourteen meetings were held, which dealt mainly with matters concerning individual hospitals.

Other matters of general interest which received consideration were as follows:

*Regional Out-Patient Clinics.*—These clinics have been established by the Brisbane and South Coast Hospitals Board in several centres. The visiting staff consists of two medical officers, two nurses, one dispenser and one clerk. The staff is in attendance on two days for two hours per week, and about 100 patients are seen.

*The Mater Misericordiae Hospital Assistance Fund.*—The Mater Misericordiae Hospital Assistance Fund came into operation on April 1, and is based on the New South Wales Contribution and Victorian Charities' Board schemes. Contributions to the fund do not in any way constitute the right of admittance into the Mater Misericordiae Public Hospitals, and the administration has informed the Council that the method of determining the right of admission is in accordance with the schemes of a similar nature which have been adopted in New South Wales and Victoria. This new arrangement has taken the place of the Mater Misericordiae Hospital Public Service scheme.

*Innisfail Hospital Inquiry.*—A good deal of correspondence took place between the several parties concerned, and the members were informed that they must continue to see patients at the hospital in consultation, if called upon to do so. Although asked for, a copy of the report of the inquiry was not made available to the Council.

*Contributory Schemes at Public Hospitals.*—The Council has ruled that until a general medical services scheme has been adopted there is no objection to contributory schemes which include a reasonable income limit and do not exclude consulting room and domiciliary practice, and the necessary classification of hospital patients. It has also been recommended that the income limit should be the lodge standard of £312 per annum.

*Brisbane and South Coast Hospitals Board.*—Extensive additions still continue to be made to the Brisbane Hospital, which is planned to accommodate 1,250 patients when completed.

**Rules and Ethical.**

*Personnel:* Dr. F. W. R. Lukin, Dr. Kenneth Wilson, Dr. Alex. Murphy, Dr. Neville Sutton, and the *ex officio* members of the Council.

During the year twenty-two meetings were held, and the following are the subjects of general interest which were reported on and ultimately dealt with by the Council:

*Cremation Regulations.*—In December, 1935, the Regulations were amended, and nine medical practitioners were appointed in the metropolitan area, and one for Toowoomba, as licensed to give certificates, in addition to the Government Medical Officer and Medical Officers of Health. Representation was made by the Council, suggesting that the number be increased in view of the fact that a licensing practitioner may not be available, and inquiries were made regarding charges for mileage *et cetera*, the position in connexion with people in indigent circumstances, and the obligation of a licensed medical practitioner to view a body for cremation purposes when called upon. Subsequently a reply was received to the effect that no fee has been fixed, but the usual charge is £1 1s.; no mileage fee has been fixed; the position of persons in indigent circumstances must rest with the medical practitioner concerned; a licensed medical practitioner may refuse to view the body. It is considered that it would be more satisfactory to license all registered medical practitioners of three years' registration and over, but so far no steps in this direction have been taken.

*Unqualified Practitioners.*—Cases were referred to the Council regarding diagnosis and treatment by unqualified persons, and the complaints were forwarded on to the Department of Health for investigation, but a reply was received stating that no breach of the *Health Acts* had been committed, although the cases in question indicated a very undesirable condition of affairs. Action was also taken by the Council which led to suppression of persons advertising as "surgeon chiropodists".

**Addition to By-laws of the Branch—52 (1) re "Death Vacancies".**—At the last annual meeting of the Branch a new by-law was adopted to protect the interests of the beneficiaries of deceased members.

**By-law re Administration of Anæsthetics.**—Advice was sought in connexion with difficulties regarding the rule relating to the administration of anæsthetics, where patients refuse to allow the only other qualified medical practitioner in the town to give anæsthetics. It was considered that under the circumstances stated, no legally qualified medical practitioner would then be available. It was also mentioned that it would be advisable to obtain in writing the refusal of the patient to allow the other medical practitioner to administer the anæsthetic.

**"Principles of Medical Ethics."**—"Principles of Medical Ethics", which were drawn up by the Federal Committee in 1914, are at present receiving consideration by the Federal Council with a view to bringing them up to date, and several alterations and amendments have been forwarded to the subcommittee appointed to deal with the matter.

**Re Medical Evidence.**—A member was advised that when giving medical evidence before a public tribunal it should be clearly stated that the opinion expressed is personal, unless an authoritative statement is being made, in which case the authorities quoted should be definitely mentioned.

**Re Dispensing.**—The Pharmacy Board of Queensland has intimated that it is desirous of having all dispensing requirements in public and private hospitals performed by pharmaceutical chemists. It was also stated that the Board is of the opinion that hospital authorities are shielding behind the fact that medical officers of the institution supervise the dispensing performed by unregistered persons, and it was pointed out that in such circumstances the medical officer accepts the responsibility for the supervision and liability for all errors and omissions.

Whilst in general it was agreed by the Council that dispensing in public and private hospitals should be performed by a qualified pharmaceutical chemist where such is available, nevertheless we cannot interfere with the right of any qualified medical practitioner himself to dispense if he so desires. It is also considered that unqualified persons should not do any dispensing except as a matter of emergency and where no qualified pharmacist is available.

**Re Prescribing Proprietary Medicines.**—In June last a circular containing a statement regarding the prescribing of proprietary medicines was sent to members of the Branch, after having been submitted to and approved by the Council.

#### Public Health.

**Personnel:** Dr. K. B. Fraser and Dr. Noel M. Gutteridge, with the *ex officio* members of the Council.

Four meetings were held to deal with correspondence relating to questions of public health, on which reports were issued to the Council. The following were the important questions dealt with under this heading:

**Therapeutic Substances, with Special Reference to Catgut.**—This matter is receiving the consideration of the Commonwealth Health authorities, and it has been suggested that, with regard to catgut, tests for sterility should also include anaerobic methods, and possibly the whole of the material should be subjected to culture instead of merely samples.

**Australian Aerial Medical Services.**—At a meeting of interested bodies held at the beginning of the year the matter of establishing a Queensland Section of the Australian Aerial Medical Services was discussed. At this meeting the Branch was represented by Dr. J. G. Wagner.

**Tropical Hygiene.**—A letter was received from a Federal Member of Parliament regarding the position in connexion with the Australian Institute of Tropical Medicine at Townsville, and inquiring how the work previously done at Townsville is being carried on. This information was supplied.

**Research at the Animal Health Laboratory.**—As very few members avail themselves of the facilities offered, a circular was sent out in August last reminding them that the laboratory of the Animal Health Station is available for the carrying out of approved research work which involves the use of animals.

**Queensland Cancer Trust—Chaoul Machine.**—In reply to an inquiry, information was received to the effect that the Trust has decided that charges for private patients treated by the Chaoul machine at its clinic at the Mater Misericordiae Hospital shall vary from a minimum of one guinea to a maximum of twenty-one guineas per case, the charge to be decided by the Treatment Committee. Intermediate cases to be charged one-third of the above rates.

**Ophthalmia Neonatorum Committee.**—A committee has been appointed to investigate the incidence of *ophthalmia neonatorum* in Queensland, and Dr. Kenneth Wilson and Dr. Noel M. Gutteridge are the representatives of the Branch thereon. In this connexion the Council has offered the assistance of the Branch in circularizing members, and urging the necessity of prophylactic instillation in every birth as a preventive of neonatal conjunctivitis, and also the recommendation of a standard preparation.

**Health Inspectors' Association, Queensland Branch.**—At the annual conference, held in August last, as a representative of the British Medical Association, Dr. T. A. Price delivered a lecture entitled "The Work of the Health Inspector: Its Place in a National Health Service." Our President, Dr. M. Graham Sutton, by invitation, moved a vote of thanks to His Excellency the Governor, who presided at the opening of the conference.

**Treatment of Wounds and Disabilities Arising from the Use of Phosphorus, Thermit and Poison Gas.**—At the request of the Federal Council a committee has been formed to go into the question of the measures to be taken against gas attacks. The personnel of the committee is as follows: Dr. A. H. Marks, Dr. M. Graham Sutton, Dr. E. S. Meyers and Dr. C. E. Wassell, with power to coopt.

**Queensland Bush Children's Health Scheme.**—At the request of His Excellency the Governor, Sir Leslie Orme Wilson, the Council has promised the cooperation of the Branch in connexion with this scheme.

#### Nutrition Research.

**Personnel:** Dr. S. F. McDonald, Dr. Noel M. Gutteridge, Dr. P. A. Earnshaw, Dr. T. H. R. Mathewson and Professor D. H. K. Lee.

Three meetings have been held since the committee was formed in January last. A statement was prepared and published in *The Courier-Mail* Special Nutrition Supplement, and a circular entitled "Adequate Nutrition During Pregnancy and Nursing", has been issued to members for distribution to their patients.

#### Publicity.

**Personnel:** Dr. F. W. R. Lukin, Dr. K. B. Fraser, and the *ex officio* members of the Council.

The Council has approved of the principle of making its aims and objects known through the public Press, and educating the public in orthodox views on medical subjects, and certain rules have been drawn up for the guidance of the Publicity Subcommittee.

In July last a statement on diphtheria immunization was published in the Press throughout Queensland, and also broadcast through the Australian Broadcasting Commission Station 4QG.

#### Building.

**Personnel:** Dr. D. Gifford Croll, Dr. S. F. McDonald and the *ex officio* members of the Council.

Eight meetings were held during the year to deal with various matters concerning the "Bayview" property on Wickham Terrace. The question of housing the Branch has been under consideration of the Council for some time, but the matter has been brought to a definite issue by the vacating of "Bayview" by its previous tenant.

The Adelaide Street property has been put on the market, as it is not now suitable for Branch headquarters. It has been decided by the Council that it would be advisable to move to "Bayview" when the premises have been made habitable with as little alteration as possible. Various suggestions have been put forward with regard to erecting a building on the "Bayview" site, which would involve an estimated capital outlay of from £11,000 to £40,000, but at the present juncture it is not possible to make a decision, as it is a matter which will require very careful consideration.

During the last two years an annual appeal has been made to members to subscribe to the sinking fund, with the object of establishing the future financial position of the Branch on a more satisfactory basis. The total amount subscribed to the fund to date is £174 13s. 8d., £13 11s. having been donated during the year.

#### Parliamentary.

**Personnel:** Dr. D. Gifford Croll, Dr. S. F. McDonald and the *ex officio* members of the Council.

No business was dealt with by this subcommittee during the year.

#### Lodge.

**Personnel:** Dr. D. Gifford Croll, Dr. J. G. Wagner, Dr. F. W. R. Lukin and the *ex officio* members of the Council.

In September last a resolution was passed by the Council which resulted in a circular to the following effect being sent to members of the Contract Practice Section:

Insufficient interest has been taken by the Contract Practice Section members to provide a quorum at the last two annual meetings.

In order to ensure that contract practice matters will be dealt with before being submitted to the Council, the Council will in future refer matters dealing with contract practice to the Lodge Subcommittee of the Council.

A special meeting of the Contract Practice Section may be held at any time, at the request of six Contract Practice Section members.

#### General Medical Services.

**Personnel:** Dr. T. A. Price (Chairman), Dr. D. Gifford Croll, Dr. N. W. Markwell, Dr. R. G. Quinn, Dr. F. W. R. Lukin and Dr. J. G. Wagner.

Eight meetings of the committee have been held, and two combined meetings with representatives of the Friendly Societies' Medical and Hospital Council.

Although the introduction of the General Medical Services Policy in Queensland has not yet been achieved, the work of organization is being steadily carried on, and representatives of interested bodies are being met and cooperation is being arranged.

It is satisfactory to note that at the last meeting of the Federal Council, after careful consideration, and after consultation with the Councils of the other Branches of the British Medical Association in Australia, and with the Council of the Parent Association, the general principles which are included in the Queensland policy were adopted.

The following are the principles referred to, which have been sent by the Federal Council to the Prime Minister of Australia and the Premier of each State:

1. That a Commonwealth Insurance Department be established under the Minister for Health, for the insurance of all below a certain income limit against all sickness; the practising profession to be adequately represented by nominees in the administration.

2. That the medical services to the community be based on the provision, for every individual, of a general practitioner or family doctor.

3. That the services should be complete. They should cover, in addition to a general practitioner service, the provision of specialist, pharmaceutical, dental and institutional services.

4. That there should be free choice of doctor.

5. That payment of general practitioners should be by capitation fees.

6. That payment for special services should be by partial or full payment by the Department for each service rendered. (It might be considered wise for the patient, where possible, to pay part of the cost of special services.)

7. That, as regards the control of the purely professional side of the services, the guaranteeing of the quality of the service and the disciplining of the doctors taking part in it, as much responsibility as possible should be placed on the organized medical profession.

The Commonwealth and State Governments have been informed that, should they decide to institute a system of national health insurance, the Federal Council of the British Medical Association in Australia will do everything in its power to bring into operation a national health insurance suitable to the needs of those who are to benefit by it.

#### Report of Contract Practice Section Committee, 1936.

**Personnel:** Chairman, Dr. F. W. R. Lukin; Honorary Secretary and Treasurer, Dr. J. W. Ralston; Committee, Dr. J. G. Wagner, Dr. A. J. Foote, Dr. J. L. Selwood, Dr. C. E. Tucker, Dr. A. E. Mason, Dr. R. E. Douglas, Dr. C. D. Gillies, Dr. D. V. Shell, Dr. A. W. St. Ledger, Dr. L. G. Hill and Dr. A. J. Lynch.

**Joint Committee:** Representatives of Branch, Dr. T. A. Price, Dr. F. W. R. Lukin and Dr. J. G. Wagner.

A number of complaints have been received and dealt with satisfactorily by the Joint Committee. It is noted that fewer complaints have been received during the year, which is due, apparently, to a better understanding existing between the lodge patients and their medical officers.

**Capitation Fee, Metropolitan Area.**—No change has taken place in the capitation fee, as the nominal wage index number has not varied sufficiently to cause any alteration.

**General Medical Services Policy.**—With a view to collecting information with regard to the general medical services policy, a circular was sent to all members of the Contract Practice Section, asking for a statement of the amount received from lodge patients, apart from capitation fee, during the last financial year. So far, about 22 replies have been received, indicating about 50% as an average of the amount collected for special services to lodge patients in addition to capitation fee.

**Scale of Fees for Special Services to Lodge Patients.**—A scale of fees has been drawn up and submitted to the Friendly Societies' Medical and Hospital Council for the information of lodge members in the Brisbane metropolitan area. The list has been published in a book of rules and regulations issued recently by the Friendly Societies' Medical and Hospital Council for distribution to lodge members. Copies of the scale of fees were also sent to country members holding lodge appointments as a guide.

**Re Medical Referee.**—A recommendation was made that the medical officer be informed that his lodge patient is to be sent to a medical referee, and that he be asked if he would care to give a short *résumé* of the patient's history.

**Medical Certificates.**—Members were notified that the Friendly Societies' Medical and Hospital Council require medical certificates to be dated on the day of issue, and not post-dated.

**Revised Lists of Lodge Patients.**—During the year all the lodge medical officers in the metropolitan area were supplied with a revised list of their lodge patients by the Friendly Societies' Medical and Hospital Council.

**Re Medical Officers Closing Lists et cetera.**—A request has been received from the Friendly Societies' Medical and Hospital Council that, when a doctor closes his lodge list or leaves the State on extended holidays, two months' notice in writing be given to that organization to enable the lodges to be notified in ample time.

#### Sections for Special Branches of Medical Knowledge.

##### Eye, Ear, Nose and Throat Section.

Inaugurated 1924. The following office-bearers were elected at the annual meeting held on November 19, 1935:

President, Dr. C. E. Wassell; Vice-President, Dr. E. J. McGuinness; Councillor, Dr. T. M. Mansfield; Auditor, Dr. L. T. Jobbins; Honorary Secretary and Treasurer, Dr. A. F. Quayle.

Quarterly meetings were held: two at the B.M.A. Rooms—one in March and one in June—and one on September 15 at the Brisbane General Hospital.

Cases of interest were exhibited and discussed at each meeting.

#### *Surgical Section.*

Inaugurated February, 1927. This section has continued its activities throughout the year. Office-bearers for 1936 were: President, Dr. J. M. Thomson; Honorary Secretary and Treasurer, Dr. Alan E. Lee; Committee, Dr. E. S. Meyers, Dr. L. M. McKillop and Dr. R. G. Quinn.

The following papers were presented to an average attendance of twelve members: "Surgical Education", by Dr. Alan E. Lee; "Aspects of Abdominal Adhesions", by Dr. L. M. McKillop, Dr. J. C. Hemsley, Dr. G. W. Macartney and Dr. M. Geaney; "Surgery of the Endocrines", by Dr. Bruce Mayes.

These papers all provoked keen discussion, and the section is generally considered to be fulfilling its purpose as the place for the presentation of papers too specialized to be suitable for the general Branch meetings.

#### *Obstetrical Section.*

Inaugurated November 15, 1927. The eighth annual meeting was held on February 4, 1936, when the following officers were elected: President, Dr. H. Stanley Waters; President-Elect, Dr. D. Gifford Croll; Statistical Committee, Dr. Kenneth Wilson, Dr. R. G. Quinn and the Honorary Secretary; Honorary Secretary and Treasurer, Dr. L. H. Foote.

The incoming President read a paper on "Obstetrical Obstacles".

The April meeting took the form of a discussion on case records of interest.

In July the section supplied a paper for the Branch on "Gonorrhoea in the Female", given by Dr. Beatrice Warner, Dr. Kenneth Wilson and Dr. S. Julius.

For October Lady Phyllis Cilento supplied a paper on "Maintenance of Muscular Tone in Pregnancy".

There was an average attendance of ten at the meetings, and members continue to send in case records. Any new members would be heartily welcomed.

#### *Medical Section.*

Inaugurated June 1, 1928. President, Dr. S. F. McDonald; Honorary Secretary, Dr. T. H. R. Mathewson.

No meetings of the section have been held, as it was thought advisable not to hold any with a view to encouraging better attendances at Branch meetings.

The section was, however, responsible for the programme for the November Branch meeting, when a paper was delivered by Dr. Alex. Murphy on "Artificial Pneumothorax in the Treatment of Pulmonary Tuberculosis".

#### *Radiological Section.*

Inaugurated March, 1930. No meetings of the Radiological Section were held during the year 1936.

#### *Affiliated Local Associations.*

##### *Downs and South-Western Medical Association.*

The tenth annual general meeting of the local association was held on September 19, 1936.

**Meetings.**—Since the last report eleven monthly general meetings have been held and three meetings of the Executive; also one special meeting of the Executive to deal with the question of proposed changes in the management of the Toowoomba British Medical Association Contract Medical Service.

At our last annual general meeting the address was given by Dr. Corlette, of Sydney, who spoke on the subject of wounds and their treatment. In October Dr. Trenerry explained to us the method of plotting and interpreting sugar tolerance curves. A successful clinical meeting was held in November. In December Dr. J.

Mowbray Thomson addressed us on the problems connected with backache in Workers' Compensation cases. In February a series of cinema films was shown on subjects of medical and surgical interest. A very useful lecture in March by Dr. J. W. Heaslop dealt with the commoner types of skin lesion. In April we repeated with success the combined meeting with the dentists of Toowoomba and district, which has been a feature of our syllabus for the last two or three years. On this occasion Dr. C. E. Wassell spoke on nasal sinusitis and allergy and on the relation of sinusitis to dental disease. In May Dr. Noel M. Gutteridge dealt with the subject of nutrition. Our June lecturer was Dr. Ellis Murphy, who gave a most interesting address on the classification and treatment of anemias. In July Dr. K. B. Fraser dealt in a practical and helpful way with the subject of abdominal pain in children. In August Dr. L. J. Jarvis Nye spoke on the gastro-enterological aspects of recent advances in medicine, giving us some interesting notes on his recent visit abroad. Tonight we look forward to hearing from Dr. Neville G. Sutton on the subject of recent advances in surgery.

The practical and helpful nature of all these lectures has been appreciated by our members. An especially pleasing feature of the meetings has been the discussion following the addresses, in which full advantage has been taken of the opportunity for a free exchange of experience and opinion.

Our cordial thanks are due to all lecturers, who have given us of their best.

During the year the question of establishing a local blood transfusion service was discussed at length at one of the monthly general meetings, and a subcommittee appointed to collect preliminary data and draft a scheme.

It has not been possible to arrange for any meetings at country centres this year, though it is hoped that a meeting may be held at Warwick before the expiry of the syllabus for 1936.

**Acknowledgements.**—In addition to our thanks expressed above to visiting lecturers and others who have so generously contributed to the success of our meetings, we must here specially express our gratitude to the Post-Graduate Course Committee of the State Branch, without whose cooperation so successful a syllabus of meetings could hardly have been arranged.

Our thanks are extended also to the Superintendent and Board of the Toowoomba General Hospital for the facilities provided in connexion with our meetings, and to Dr. T. A. Price for the use of his rooms.

**Membership.**—The number of our financial members stands at 27—two less than a year ago.

**Finance.**—The financial statement to be submitted shows a credit balance of £1 14s. 1d. The reduced state of our balance, as compared with previous years, is due to the purchase, in pursuance of the decision of the last annual general meeting, of an epidiascope. This has now for some months contributed much to the quality of our meetings.

**Contract Medical Service.**—No active measures have been taken to extend the service. This is in agreement with the policy of the Branch of marking time until a suitable opportunity occurs for its extension into a wider scheme, in harmony with a possible State health scheme and with the work of the friendly societies.

**Acknowledgements.**—The service continues to be indebted to Dr. Price for accommodation of staff and records.

V. R. WOODHILL,  
President.

J. G. MORRIS BEALE,  
Honorary Secretary and Treasurer.

#### *Bundaberg Local Association.*

**Annual Report, 1936.**—There is little to report about the activities of the Bundaberg Local Association. During the year Dr. J. V. Duhig and Dr. E. S. Meyers gave a lecture on "Cancer Diagnosis", with lantern slide illustrations. Several informal meetings were held to discuss anaesthetics and out-patient departments at the Bundaberg General Hospital.

EGMONT SCHMIDT,  
Honorary Secretary.

*Central Western Medical Association.*

No meetings were held for this area during the year, as no contentious matter was brought up for consideration.

C. V. WATSON BROWN,  
Honorary Secretary.

*Rockhampton Local Association.*

*Annual Report, 1936.*—During the year only one meeting of the above association was held. The only business was the election of officers for the ensuing year. The following officers were elected: President, Dr. D. E. A. Buchanan; Vice-President, Dr. J. C. Ross; Honorary Secretary, Dr. Trevor A. Parry.

TREVOR A. PARRY,  
Honorary Secretary.

*North Coast Medical Association.*

No meetings of the North Coast Medical Association were held during the year 1936, but it is hoped that a further meeting will be held in the near future.

A. J. KENNEDY,  
Acting Honorary Secretary.

*The South Burnett Medical Association.*

*Annual Report, 1936.*—During the past year this association has held five meetings, three of these taking place at Wondal and the other two at Kingaroy.

On two of these occasions lecturers visited from Brisbane. In February Dr. H. S. McLelland gave a most interesting address on "Menstrual Disorders", and then early in October Dr. S. F. McDonald delivered an equally instructive and interesting lecture on "Some Recent Advances in Medicine". Dr. McDonald also demonstrated the Kanavel film and two others produced in Brisbane. Mr. Bagnall, from the Anatomy Department of the Queensland University, who came up with Dr. McDonald, ably officiated at the movie machine.

The annual meeting was held at Kingaroy on August 10, and the following office-bearers were elected for the year: President, Dr. C. T. Underwood; Vice-Presidents, Dr. P. Davidson and Dr. Jean Stobo; Honorary Secretary and Treasurer, Dr. R. V. Rickard.

R. V. RICKARD,  
Honorary Secretary.

Annual reports from Townsville and Maryborough Local Associations arrived too late for inclusion in the annual report of the Council.

*Queensland Post-Graduate Committee.**Annual Report, August, 1936.*

*Personnel of Committee:* Chairman, Dr. S. F. McDonald; Vice-Chairman, Dr. A. V. Meehan; Honorary Secretary-Treasurer, Dr. H. W. Johnson; Dr. Alex. Murphy, Dr. E. S. Meyers, Dr. Neville G. Sutton, Dr. N. W. Markwell, Dr. P. A. Earnshaw, Dr. G. C. Taylor, Dr. G. A. McLean, Dr. L. M. McKillop, Dr. C. E. Wassell, Dr. J. V. Duhig, Dr. L. W. N. Gibson, Dr. E. O. Marks, Dr. Alan E. Lee, Dr. D. A. Cameron.

During the year Dr. H. J. Windsor and Dr. K. B. Fraser resigned from the Committee, and Dr. G. C. Taylor and Dr. G. A. McLean were appointed. Dr. Taylor is the representative of the Mater Misericordiae Children's Hospital, and Dr. G. A. McLean is representing the Mater Misericordiae Public Hospital. Dr. E. O. Marks was appointed to represent the Hospital for Sick Children, Brisbane.

*Meetings.*—During the year 11 meetings of the Committee were held.

*Annual Post-Graduate Course.*—This year's course was held from June 1 to 6, 1936. The membership numbered 66, including eight from the country. Difficulty in obtaining *locum tenentes* is considered to be the main reason why more country members are not able to come to Brisbane for the course.

Visiting lecturers were Professor Harold R. Dew and Dr. Allan Walker, both of Sydney, whose lectures were much appreciated. Professor Dew also delivered the

Joseph Bancroft Memorial Lecture, the subject being "Some Aspects of Neurosurgery".

Professor H. E. Helmore, of the Queensland University, gave a lecture, and various Brisbane members were responsible for the remainder of the programme, which included many interesting demonstrations and lectures. A great deal of time and work was put in with excellent results, and their efforts warranted a much larger attendance than the majority of them had.

Professor H. J. Wilkinson, Professor D. H. K. Lee and Professor H. E. Helmore were made honorary members of the course for this year.

The dance held on June 3 at the Belle-Vue Hotel was one of the most friendly and enjoyable functions which have taken place, and the Honorary Dance Secretary, Dr. Noel M. Gutteridge, is to be congratulated upon the result.

*Overseas Lectures.*—In January last Professor Ludwig Fraenkel, of Breslau, delivered a lecture on "Uterine Carcinoma", and in February Dr. A. E. Barclay, O.B.E., of Cambridge, gave an interesting and entertaining lecture on the "Mechanics of Digestion". Both these lectures were well attended and thoroughly enjoyed. It is hoped that arrangements can be made for a visit from Professor Jonathan Meakins, M.D., of Montreal University, when he comes to Australia.

*Local Associations.*—Various lecturers visited Toowoomba, Kingaroy and Lismore during the year, under the auspices of the Committee.

*General Business.*—Arrangements are being made for the preparation of a film demonstrating the reeducation of paralytic cases.

With the object of purchasing a micro-projection apparatus for the Committee, inquiries are being made overseas by Dr. J. V. Duhig.

Since this report was issued the constitution of the Committee has been altered to make provision for representation of the Faculty of Medicine by the appointment of two representatives. The Dean of the Faculty of Medicine (Professor H. J. Wilkinson) and Professor of Physiology (Professor D. H. K. Lee) have been appointed in this capacity.

*Joseph Bancroft Memorial Lecture.*

The lecture this year was delivered by Professor Harold R. Dew, his subject being "Some Aspects of Neurosurgery". It was held on June 5, 1936, at the Geology Theatre of the University of Queensland, and was well attended. Representatives of the Board of Faculties of the University and of the Council of the Royal Society were also present. At the conclusion of the lecture the Joseph Bancroft Memorial Medal was presented to Professor Dew by the President.

*Jackson Lecture.*

Dr. Alex. H. Marks delivered the Jackson Lecture on September 4, 1936, the title of which was "A Review of Midwifery Instruments since Paré".

*Federal Council.*

Two meetings of the Federal Council of the British Medical Association in Australia were held in Sydney, the first on March 16 and the second on August 24, 1936. At both these meetings the Branch was represented by Dr. D. Gifford Croll and Dr. T. A. Price.

Reports of the proceedings were published in THE MEDICAL JOURNAL OF AUSTRALIA on April 4 and September 19, 1936.

*Australasian Medical Congress (British Medical Association).*

The Fifth Session of Congress will be held in Adelaide from August 23 to 28, 1937. Dr. Thos. Price has been appointed a Vice-President of Congress.

*Medical School.*

The inauguration of the Faculty of Medicine of the University of Queensland took place on October 1 and 2, when inaugural lectures were delivered by Professor H. J.



### Death of King George V.

A message of sympathy to His Majesty the King, Queen Mary, and members of the Royal Family on the death of His late Majesty, King George V, was sent through His Excellency the Governor, Sir Leslie Orme Wilson, and an acknowledgement was received.

**King George V Memorial Fund.**—Donations collected by the Branch from members amounted to £65 18s. This does not represent the full total subscribed by the medical profession, many of whom sent their donations direct to the central fund.

### Visitors.

During the year our visitors have been Professor Ludwig Fraenkel, of Breslau, Dr. A. E. Barclay, O.B.E., of Cambridge, and Professor Winifred Cullis, of London, all of whom delivered enjoyable lectures.

### Finance.

The financial position of the Branch, so far as the General Account is concerned, is satisfactory. It is regretted, however, that eight members were struck off the membership list for default in payment of subscriptions for 1935, and 50 members still owe their subscriptions for the current year.

### General.

Although the Council has not attained any outstanding achievements, it has nevertheless dealt with many matters of great interest to the Branch as a whole and to members individually, as is shown in this report.

In conclusion, I wish to thank the Council members for their loyal support during the year, and express my appreciation of the efficient services of the staff.

(Signed) M. GRAHAM SUTTON,  
President.

### FINANCIAL STATEMENTS.

The financial statements, which had been circulated amongst members before the meeting, were presented and adopted. The balance sheet is published herewith.

### ELECTION OF OFFICE-BEARERS.

The President announced the result of the election of office-bearers and members of the Council.

**President:** Dr. Thos. A. Price.

**President-Elect:** Dr. R. G. Quinn.

**Past-President:** Dr. M. Graham Sutton.

**Honorary Secretary:** Dr. L. W. N. Gibson.

**Councillors:** Dr. D. Gifford Croll, Dr. P. A. Earnshaw, Dr. K. B. Fraser, Dr. N. M. Gutteridge, Dr. Basil L. Hart, Dr. N. W. Markwell, Dr. E. S. Meyers, Dr. Ellis Murphy, Dr. S. F. McDonald, Dr. G. A. McLean, Dr. Neville G. Sutton, Dr. J. G. Wagner, Dr. C. E. Wassell, Professor H. J. Wilkinson.

On the motion of Dr. R. G. Quinn, seconded by Dr. B. L. W. Clarke, Mr. Roy S. Groom was appointed auditor.

### Ethics Committee.

On the motion of Dr. Gifford Croll, seconded by Dr. K. B. Fraser, the following were elected members of the Ethics Committee: Dr. Alex H. Marks, Dr. Mervyn Patterson, Dr. G. P. Dixon, Dr. Gavin H. Cameron and Dr. G. W. Macartney.

### INDUCTION OF PRESIDENT.

Dr. M. Graham Sutton then inducted the new President, Dr. T. A. Price, to the chair. Dr. Sutton said that no member of the Council had worked harder than Dr. Price, who, although he lived in the country and had to travel a long distance, had not missed one of the fortnightly Council meetings in the year. That he was willing again to undertake the position of President was worthy of praise.

### PRESIDENT'S ADDRESS.

Dr. Price then delivered his president's address (see page 1).

### VOTES OF THANKS.

Dr. M. Graham Sutton moved a vote of thanks to Dr. Price, which was seconded by Dr. R. G. Quinn and carried by acclamation.

Dr. Price referred to the excellent work done by the Lay Secretary, Mrs. Spooner, and moved a vote of thanks to her, which was carried by acclamation.

### NOMINATIONS AND ELECTIONS.

THE undermentioned have applied for election as members of the New South Wales Branch of the British Medical Association:

Gledhill, Walter Charles, M.B., B.S., 1936 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.

Stening, Malcolm James Lees, M.B., B.S., 1936 (Univ. Sydney), Royal Prince Alfred Hospital, Camperdown.

## Medical Practice.

### THE ADELAIDE HOSPITAL RADIOTHERAPY CLINIC.

THE following circular has been issued to medical practitioners by the Adelaide Hospital Radiotherapy Clinic.

The following suggestions to general practitioners regarding certain questions of diagnosis and treatment in common lesions of the skin and lip are based on the experience of the Adelaide Hospital Radiotherapy Clinic.

#### Skin.

Apart from vascular and other benign lesions, the most common tumours of the skin are hyperkeratoses, rodent ulcer, squamous epithelioma and melanoma.

**Hyperkeratoses.**—Hyperkeratoses are frequently multiple and on exposed surfaces of the skin. Their chief importance is the possibility of development into a malignant condition. The most important point in diagnosis is to be sure that this development has not occurred when the patient is first seen. The earliest sign of such development is thickening beneath the scale, and biopsy should include the centre of the scale.

Treatment in single cases may be by radium plate or diathermy; when the hyperkeratoses are multiple over a particular area, X ray treatment is most economical.

Results are usually satisfactory with sufficient dosage, with the exception of *keratoma auricularis*, which is especially refractory to radiotherapy, and is best treated with diathermy.

**Rodent Ulcer.**—Rodent ulcer is probably a neoplasm of sebaceous glands or hair follicles and, contrary to common belief, generally develops *ab initio* and not beneath a keratosis. Roughly speaking there are two main types: (i) the adenomatous or cystic, resulting in a raised tumour, often not ulcerated; and (ii) the flat, spreading ulcerated type often covered with crust. They are distinguished from epitheliomata by their relatively long history and absence of marked induration round the base. In the ulcerated type the beaded margin of the ulcer also serves as a distinguishing mark. Glandular enlargement is so rare that its presence should excite suspicion of epithelioma. For correct diagnosis biopsy should always be performed at the time of treatment.

Treatment is by relatively wide surgical excision or diathermy coagulation, or better by radium or deep X ray therapy. With radium it is usually best to employ buried needles or a surface mould, while radium plate treatment should be reserved for the smallest and most superficial tumours. When tumours of the hand or ear are treated with radium, the needles should always be mounted on a mould and not buried in the tissues. (See Circular Number 2.)

### Squamous Cell Carcinoma.

Squamous cell carcinoma is less common than rodent ulcer on the skin of the face, but is relatively much more common on the auricle or on the dorsum of the hand or forearm. It, too, may arise *ab initio*, but frequently develops beneath a hyperkeratosis.

Excluding tumours of the penis, vulva and anus, and lesions of the lip, which will be considered later, the rules for treatment are similar to those which apply to rodent ulcers, except that application of a lightly-filtered radium plate is never desirable. Glandular invasion occurs late, so that routine treatment of the gland areas is unnecessary. If spread to glands is suspected, surgical excision constitutes the main treatment; additional treatment by means of post-operative deep X ray therapy or a radium mould is desirable. It is very wrong to perform a small local excision or to use diathermy treatment for a squamous cell carcinoma of the skin, for the development of a recurrence, or, more correctly, the growth of tumour cells left behind, is thus rendered probable. Such a happening gives more time for gland invasion, while the tumour becomes more resistant to radiation therapy.

The clinic has had no evidence that performing a biopsy hastens or makes more probable the development of spread to glands.

**Melanoma.**—Neither clinically nor histologically is the onset of malignancy in melanomata easily diagnosed. Enlargement or ulceration of a long-standing mole is an indication for radical treatment, for spread to glands and distant metastasis occur early. Trauma of a benign mole is almost certainly a factor in causing a neoplastic change, so that half-hearted attempts at treating such a benign tumour are undesirable. The present practice is to treat these tumours by a widespread diathermy coagulation followed immediately by application of a radium mould or deep X rays; the addition of the latter is desirable, for several malignant moles treated at the Adelaide Hospital by means of radiation without surgery have remained healed over several years, indicating at least a degree of radio-sensitivity.

### Lip.

#### Benign Conditions.

**Keratosis.**—Keratosis is either linear scaliness along the muco-cutaneous margin or a more circumscribed "keratoma". The latter is more often followed by a squamous cell carcinoma. They may be treated by a plate, but needling should be used if the presence of an early malignant change is suspected.

**Leucoplakia.**—Leucoplakia may have one of a variety of causes, and occasionally precedes a carcinoma. Very intensive radiation is required for its eradication, and perhaps diathermy is preferable.

**Chronic Benign Ulcer.**—Chronic benign ulcer is usually flabby and without induration. It may become malignant, and this is especially true of the small fissured ulcer running across the length of the lip. Treat by diathermy, a radium plate or needles. The fissured cracks at angles of the mouth in patients suffering from achlorhydria are not considered in this connexion.

#### Malignant Conditions.

**Epithelioma.**—Epithelioma is indurated and nearly always raised. Secondary infection may give a superficial resemblance to chronic benign ulceration. Wide excision may cure, but the cosmetic result after this is inferior to the result after radium needling or mould or X rays. The routine method is to treat the lip by burying radium or radon needles.

The draining glands are frequently enlarged without containing deposits. On this account the practice has been to order a radical surgical excision of glands as the main treatment. The addition of radiotherapy may be decided on after competent histological examination of the excised glands. It is recognized that the routine excision of glands is not followed in every centre.

**Rodent Ulcer.**—Rodent ulcer occurs only by extension from a neighbouring tumour of the skin. Its treatment was discussed above.

## Congress Notes.

### AUSTRALASIAN MEDICAL CONGRESS (BRITISH MEDICAL ASSOCIATION).

THE inaugural meeting of the fifth session of the Australasian Medical Congress (British Medical Association) will be held on the evening of Monday, August 23, 1937. The congress will last until Saturday, August 28, 1937. Every member of the British Medical Association who intends to join the fifth session is requested to complete a form of application and to send it, together with two guineas, to the Honorary Local Secretary of Congress of the State in which he resides. Exchange must be added to cheques. It is important that application for membership of congress be made without delay, as there will be a great demand for accommodation and transport. Members are particularly requested to indicate whether they will be accompanied by ladies, and what type of hotel or boarding accommodation they require.

#### Travelling Facilities.

##### Railways.

Members travelling by any State or Commonwealth railways will be entitled to return tickets at single fares *plus* one-third. This concession applies to their wives, also sons under sixteen years of age and unmarried daughters.

The following are the fares from the respective capital cities:

	1st Class.	2nd Class.
	£ s. d.	£ s. d.
Brisbane to Adelaide .. ..	13 0 0	8 13 4
Melbourne to Adelaide .. ..	4 13 4	3 2 8
Newcastle to Adelaide .. ..	9 3 4	6 2 8
Perth to Adelaide <sup>1</sup> .. ..	18 6 6	12 6 2
Sydney to Adelaide .. ..	8 6 8	5 10 8

Sleeping berth fees are as under:

	£ s. d.
Brisbane-Sydney .. ..	1 0 0
Sydney-Albury .. ..	1 0 0
Melbourne-Adelaide .. ..	1 0 0
(Pullman car, £1 5s.)	

The reserved seat fees (either class) are as under:

	£ s. d.
Brisbane-Sydney .. ..	0 1 3
Sydney-Albury .. ..	0 1 0
Albury-Melbourne .. ..	0 1 3
Melbourne-Adelaide .. ..	0 1 3

Concession tickets issued to delegates are available for return within one month from date of issue.

#### Shipping.

Members travelling by the Associated Steamship Owners' ships, that is, The Adelaide Steamship Company Limited, Melbourne Steamship Company Limited, McIlwraith McEachern Limited, Huddart Parker Limited, Australasian United Steam Navigation Company Limited, and Howard Smith Limited, will be granted a concession of 10% off first class return fares. This also applies to their wives and adult members of families attending the congress.

The Tasmanian companies will also allow 10% off first class return fares for members and wives, but this does not apply to adult members of families.

The New Zealand shipping companies offer a 10% concession to delegates to congress accompanied by one female relative, providing ten or more travel from each port.

#### Airways.

Members desiring to proceed to congress by air will be allowed 10% off schedule fares, providing not less than ten members travel this way.

<sup>1</sup> Including berths and meals, Western Australian and Commonwealth railways, and reserved seats, Port Augusta to Adelaide and return.

## Correspondence.

## "ENSOL."

SIR: I must apologize for asking for space once more in order to discuss the value of "Ensol". In my letter published in THE MEDICAL JOURNAL OF AUSTRALIA of November 7 I quoted the findings of various high authorities in cancer research, and of several medical journals of the highest standing, all of which showed that tests of "Ensol" made by independent investigators provided no evidence of its usefulness, and which pointed out that, before "Ensol" could be accepted as a means of treatment of human sufferers from cancer, definite evidence of its efficacy must be provided by those who invented and used it.

In order to give Dr. Neville Davis an opportunity of providing such evidence by the treatment of cancer in situations where results could be observed easily and accurately, I suggested that he should treat three cases of basal-celled and three of squamous-celled cancer of the skin in early stages when little or no risk was incurred by the patient by reason of the delay of two months which would be occasioned by the use of "Ensol". In order to let Dr. Davis see what could be done by the radiation treatment which he decries, I offered to treat with a single application of X rays the cases in which he failed, or similar cases if he succeeded to any appreciable degree.

Dr. Davis made no reply to this challenge for four full weeks. But then on December 4 he chose to answer me, not in THE MEDICAL JOURNAL OF AUSTRALIA, but in the *Daily Telegraph* of December 4, 1936, as follows:

## ENSOL EFFICACY QUERIED BY X RAY SPECIALIST.

## Test Treatment Suggested with Cancer Patients.

Controversy concerning the efficacy of the Ensol cancer treatment has resulted in a "challenge" being issued by Dr. E. H. Molesworth, a Macquarie Street X-ray specialist.

It appears in THE MEDICAL JOURNAL OF AUSTRALIA, and is directed at Dr. Davis, Sydney representative of Dr. Connell, of Canada, who devised the treatment.

"I suggest that Dr. Davis undertake the treatment of six patients—three with basal-celled and three with squamous-celled carcinoma (cancer) of the skin", writes Dr. Molesworth.

"If no improvement has been brought about after two months I will treat same cases with radiation.

"My treatment will be a single exposure of X-rays. If marked improvement has been brought about by Ensol I will try what can be done with X-rays in a similar case.

"Will Dr. Davis accept this challenge?"

Asked yesterday to comment on this proposed test, Dr. Davis said: "There is no 'challenge'. Physicians do not challenge one another."

## Will Conduct Test.

"Ensol is intended for deep-seated growths only, and as a test I am prepared to treat six cases of this nature with Ensol while six others are treated by deep X-rays.

"I will leave the verdict to the physicians originally consulted by such patients, and to the patients themselves."

Dr. Davis added that in any case such small-scale tests would be scientifically unsatisfactory.

Dr. Davis will have much difficulty in persuading medical readers that a cancer situated deeply is amenable to treatment with "Ensol" while one situated on the surface is resistant. It is claimed by its supporters that "Ensol" acts by liquefying cancer cells *in situ*. Being injected, and therefore carried to the cancer by the blood

and lymph circulation, there appears no reason why the blood and lymph vessels feeding a superficial cancer should not act just as efficiently as carriers of "Ensol" as those which supply a deep-seated growth.

Of course, it is claimed that "Ensol" acts specifically for each and every variety of cancer, and that it must be made from the filtrate obtained from a culture grown upon cancer cells of the particular type occurring in the growth to be treated. But surely the inventors of "Ensol" have not neglected to make a suitable preparation of two of the commonest varieties of carcinoma that afflict humanity.

However, we have arrived somewhere. Dr. Davis admits that basal- and squamous-celled cancer of the skin are not amenable to treatment by "Ensol". Presumably squamous carcinoma of the lip, tongue, anus and vulva are also excluded. Such patients should be warned that they can expect nothing from "Ensol". Dr. Davis says there is no challenge. I can assure him that the challenge is very real and serious. Dr. Davis says that physicians do not challenge one another. This is really deliciously naïve on Dr. Davis's part, or else it is once more something put forward for lay rather than for medical consumption. Perhaps, however, Dr. Davis has used this as a means of infusing a dash of humour into an otherwise dry argument.

In any case, almost in the same breath as that in which he declines my challenge, Dr. Davis issues another to me. This I intend to accept with some modifications, which, I am sure, will be found quite reasonable.

Since Dr. Davis has admitted that "Ensol" is no good for superficial cancers, I will admit that cancers of the alimentary tract are susceptible, at best, only of temporary benefit as a result of treatment by deep X radiation, and must be excluded from the experiment. In order to avoid further unnecessary trespass on the space of this journal, I will explain that the degree of radio-resistance possessed by growths of this nature is such that the delivery of a dose sufficient to destroy them would mean irreparable damage to nearby vital organs that must necessarily be subjected to the same dose as the cancer. Of course, if Dr. Davis can prove to the satisfaction of the adjudicator that "Ensol" provides a real benefit in such cases, he will have provided a service to humanity. I, therefore, suggest that he throw in a case of carcinoma of the stomach and one of the large intestine for good measure. But I venture to suggest that cancer of the breast and cancer of the *cervix uteri* are both deep-seated growths, yet situated where progress can be accurately observed.

There are several provisos which I must make:

(1) That the case must be inoperable, but not in *extremis*. For example, it would be useless for the purpose of the experiment to attempt treatment of a patient who showed distant metastases. The involvement of the regional glands, however, need not be taken to constitute a bar.

(2) That the patients must be made fully aware of the risks they may run as a result of two months' delay before the institution of methods of treatment of proved value.

(3) That the treatment by X radiation in these cases shall be not a single application, but by means of a series of fractional doses delivered daily over a period of several weeks.

(4) That the cases be selected by a body expert in the diagnosis and in the immediate prognosis of such cases. For this purpose the nominees of the Cancer Research Committee would be most suitable. The same nominees could act as adjudicators of results obtained by the two forms of treatment. Dr. Davis's suggestion that the adjudicators should be the medical man referring the patient and patient himself is surely unscientific. For example, the patient feels better when under the influence of morphia, but the growth is unaffected.

(5) If Dr. Davis prefers it, and if cases are available, it might be better that two parallel series of similar cases in approximately the same stage should be treated simultaneously, one by "Ensol" and one by deep X rays. I should prefer this, but I am willing to follow two months after Dr. Davis if he has failed to produce any considerable improvement.

(6) I agree that a larger number of cases would be desirable, but this would mean delay for an indefinite period before a report could be made and, unfortunately, the deep X ray treatment of each case of the kind mentioned above will cost me in out-of-pocket expenses a minimum of £15 to £20.

(7) If a case of lymphosarcoma or of seminoma is available, I will throw in the treatment of such cases for good measure just as I have asked Dr. Davis to do in the case of carcinoma of the stomach or bowel.

(8) Finally, I feel that I must insist that the reports upon the above experiment be published in *THE MEDICAL JOURNAL OF AUSTRALIA* or in *The Journal of the Cancer Research Committee of the University of Sydney*, and not in the public Press.

Yours, etc.,

E. H. MOLESWORTH.

235, Macquarie Street,  
Sydney,  
December 11, 1936.

#### AN EXPLANATION.

SIR: In order to clear up any ambiguity which may have arisen in respect of a portion of my paper published in the journal of October 24, 1936, I desire your readers to note that the word "it" at the end of the second line of the second paragraph on page 563 must be read as referring—as indeed does the whole paragraph—to veronal.

Yours, etc.,

F. W. CARTER, M.B., Ch.B. (Aberdeen).

"Chennell House",  
260, St. George's Terrace,  
Perth,  
Western Australia,  
December 15, 1936.

#### TROPICAL AUSTRALIA.

SIR: In the journal for November 21 there appeared an interesting inaugural address by Professor Lee on the settlement of tropical Australia.

Amongst the many problems raised in such discussions there nearly always emerges the tacit suggestion that men with coloured skins can stand heat better than those with white skins, but I have never seen conclusive evidence that this is a fact. It is true that the man with the coloured skin is more adaptable in that he discards most of his clothing when at work.

The address dealt mainly with physiological problems. Tropical Australia differs from practically all other tropical countries in the comparative absence of tropical disease, and the vital statistics of tropical Queensland are excellent, as indeed are the economic conditions. From the economic standpoint tropical Australia, apart from tropical Queensland, presents problems so far insoluble. References to an essay by Mr. Wyn Williams in the *Economic Record* for July, 1935, and a recent memorandum by the Bank of New South Wales indicate the reasons. Furthermore, with the aid of Sir David Rivett, I obtained information relating to part of Java and the Sunda Islands with a climate similar to that of the Northern Territory, but with a better rainfall, and in which the same difficulties presented themselves. This information was set out in *Nature*, April 25, 1936.

Finally be it remembered that Australia has spent £17,000,000 in endeavouring to settle the Northern Territory—and not foolishly—and that able men have tried to develop it and have failed. The South Australian Government in 1876 tried to import Japanese to develop it, but the Japanese Government declined the invitation. The Chinese failed to make good in the Territory. Something may be done with this country with the aid of scientific breeding of suitable animals and possibly with better communications, and it may be some mineral development, but so far success has not been obtained.

People will settle wherever a living can be obtained with reasonable comfort and safety; so far the living has not been generally obtainable.

Whilst concurring entirely with Professor Lee that physiological investigation is desirable, tropical Queensland shows that a white race can and does thrive there, though under physiological guidance their comfort might be increased. But the failure in the Northern Territory is just as definitely economic.

Yours, etc.,

JAMES W. BARRETT.

103-105 Collins Street,  
Melbourne, C.I.,  
December 15, 1936.

#### THE BORDET-WASSERMANN REACTION AND ITS SIGNIFICANCE.

SIR: Levaditi and Lepine have shown that the modifications of the flocculation in the serum which are shown in the positive Bordet-Wassermann and Meinicke reactions are independent both of the virulence of the germ and the state of infection or immunity of the host, since one can easily cause them to appear by injecting into the animal spirochaetes killed by heat.

Now there are numbers of these spirochaetes, and they breed in putrifying animal matter, excrement *et cetera*. Some have become pathogenic. They have two phases of existence, one visible and the other infra-visible. In some animals, as in the rat, the visible form is never attained, although the organs of the animal remain virulent.

The spirochaete of syphilis is only one of the many varieties which in all probability came from a common stock. At first harmless to the various animals, they came to infect, but a process of evolution brought about changes, and they acquired new properties—some became virulent and some died out.

In tropical countries the waters of rivers, lakes, marshes *et cetera* become contaminated by the excrement of birds and animals, and the people who drink these waters can become infected. But because the blood of a person gives a positive Bordet-Wassermann reaction I maintain that that does not justify one in diagnosing syphilis. The reaction simply indicates a spirochaetosis, and it has no absolute value—no matter how many times confirmed.

Yours, etc.,

J. MORRIS ROE, M.B.

Victory Chambers,  
Queen Street,  
Brisbane,  
December 15, 1936.

#### THE FIFTH SESSION OF THE AUSTRALASIAN MEDICAL CONGRESS (BRITISH MEDICAL ASSOCIATION).

SIR: The Fifth Session of the Australasian Medical Congress is to be held at Adelaide from Monday, August 23, to Saturday, August 28. It is thirty-two years since the congress last met at Adelaide. As President-Elect I extend, on behalf of the General Committee of Congress, a very cordial invitation to all members of the British Medical Association in Australia, New Zealand and elsewhere to attend the congress.

The executive committee and the various officers of congress have been engaged for some months in arranging the scientific and social programmes. At this stage these are necessarily incomplete, but progress reports will from time to time be published in *THE MEDICAL JOURNAL OF AUSTRALIA*.

Although the date of the congress does not actually fall within the centenary year of South Australia, nevertheless the general committee of congress (comprised of all the members of the South Australian Branch of the British Medical Association) regards the organization of the congress as being in a sense its contribution to the celebration

of the centenary. It is the committee's desire that every member of the congress should at its conclusion feel that the occasion had been a happy and memorable one in 1937.

Yours, etc.,

H. S. NEWLAND.

163, North Terrace,  
Adelaide,  
December 23, 1936.

#### UTEROSCOPY.

SIR: In an endeavour to further the studies of clinical malignancy, its early recognition and its relationship to endocrinology, I have chosen the mucosa of the uterus as a means of investigation in that it is stimulated both directly and indirectly by ovarian and pituitary secretion. The means to obtain this end, if I may be permitted to use the term, is that of uteroscopy by means of an ordinary examining cystoscope.

There is much to be learnt from this method, the recognition of the normal from the abnormal, the hyperæmia of premenstruation, malignant states, and, in one case, the diagnosis of a tubal pregnancy *et cetera*.

Not every uterus lends itself to this macroscopic method, but after the investigation of several hundred cases over a period of seven years I commend it to those who are interested.

Yours, etc.,

KENNETH ADDISON, M.B., Ch.M.

Waverley,  
New South Wales,  
December 19, 1936.

#### HISTIDINE IN GASTRIC ULCER.

SIR: With regard to your article in THE MEDICAL JOURNAL OF AUSTRALIA of December 19, 1936, on histidine in gastric ulcer, I would like to draw attention to the fact that with injection of 0.2 gramme of "Larostidin" (Roche), that is, histidine monochlorhydrate in 5 cubic centimetres of saline, there is a rapid increase in the rate of coagulation of the blood to about 50% of its original value.

I have demonstrated this in several cases, more exact reports of which will appear elsewhere. This may play a considerable rôle in the initiation of improvement in symptoms of such ulceration, and from the contradictory nature of the literature on this subject it would appear that we are, as yet, not completely informed upon the matter.

Yours, etc.,

C. STANTON HICKS.

Department of Pharmacology and Human Physiology,  
The University of Adelaide,  
Adelaide,  
December 24, 1936.

#### PROFESSOR D. A. WELSH PRIZE FUND.

ADDITIONAL subscriptions have been received for the Professor D. A. Welsh Prize Fund as follows:

- £5 5s.: Dr. M. McIntyre Sinclair.
  - £3 3s.: Dr. A. Watson Munro.
  - £2 2s.: Dr. A. S. Walker, Dr. A. J. Collins, Dr. W. C. Sawers, Dr. Mary Burfitt Williams, Dr. George Bell.
  - £1 1s.: Dr. Lindsay Dey, Dr. W. F. Simmons, Dr. V. M. Coppleson, Dr. W. H. Donald, Dr. H. G. Holmes, Dr. Phyllis M. Anderson, Dr. Colin M. Edwards, Dr. James Gilchrist, Professor A. N. Burkitt, Dr. F. Abbey Wiesener.
  - £1 0s. 6d.: Dr. N. F. Benjamin.
  - £1: Dr. John A. L. Wallace.
  - 10s. 6d.: Dr. Merrick O'Reilly, Dr. Stanley G. Bradfield.
- The total now stands at £113 12s.

#### THE STAWELL MEMORIAL FUND.

THE following additional subscriptions have been received for the Stawell Memorial Fund:

- £24 7s. 6d.: Honorary Medical Staff, Royal Melbourne Hospital.
- £2 2s.: Dr. F. Blois Lawton.
- £1 1s.: Dr. J. A. Smeal, Dr. T. G. Ross.

#### A MEMORIAL TO THE LATE JOHN SMITH PURDY.

THE following letter is published at the request of the Medical Politics Committee of the New South Wales Branch of the British Medical Association:

New South Wales Health Week Council,  
c.o. Dept. of Public Health,  
52, Bridge Street,  
Sydney,  
November 11, 1936.

Dr. Hunter,  
Medical Secretary,  
British Medical Association,  
Macquarie Street, Sydney.

Dear Doctor,

At a meeting of the Executive of the New South Wales Health Week Council held yesterday under the Chairmanship of Professor Harvey Sutton, it was decided to invite the cooperation of the British Medical Association in the effort to raise funds to provide a fitting memorial to the late Dr. J. S. Purdy, founder and first Chairman of the Health Week Movement in this State and Metropolitan Medical Officer of Health and City Health Officer for many years.

As you will, no doubt, have observed in the Press, it is proposed to establish a memorial scholarship either at the Sydney Technical College in the Department of Hygiene, or, if sufficient funds are obtained, at the Medical School of the Sydney University. It is considered that there could be no more fitting memorial than the training of health workers, either as a health inspector or a doctor.

It is felt that perhaps the British Medical Association would assist the movement, possibly by opening a subscription list amongst its members or in some other way, and by commending the appeal in its official journal.

Thanking you,

Yours faithfully,

(Signed) A. G. WHITE,  
Honorary Secretary.

#### Obituary.

##### ROBERT SEWERS BERRY.

WE regret to announce the death of Dr. Robert Sewers Berry, which occurred on December 14, 1936, at Southport, Queensland.

##### SAMUEL HARRY HARRIS.

WE regret to announce the death of Dr. Samuel Harry Harris, which occurred on December 25, 1936, at Sydney, New South Wales.

##### WILLIAM SELDON.

WE regret to announce the death of Dr. William Seldon, which occurred on December 25, 1936, at Leura, New South Wales.

## Books Received.

**ALLERGIC DISEASES, THEIR DIAGNOSIS AND TREATMENT**, by R. M. Balyeat, M.A., M.D., F.A.C.P., assisted by R. Bowden, B.A., M.D., F.A.A.P.; Fourth Edition, revised and enlarged; 1936. Philadelphia: F. A. Davis Company. Demy 8vo, pp. 531, with illustrations.

**THE PREVENTION AND TREATMENT OF DISEASE: A PRELIMINARY COMMUNICATION**, by W. M. Stevens, M.D.; 1936. London: H. K. Lewis and Company Limited. Demy 8vo, pp. 31. Price: 2s. net.

**BONES: A STUDY OF THE DEVELOPMENT AND STRUCTURE OF THE VERTEBRATE SKELETON**, by P. D. F. Murray, M.A., D.Sc.; 1936. Cambridge: The University Press. Demy 9mo, pp. 213, with illustrations. Price: 8s. 6d. net.

## Diary for the Month.

- JAN. 4.—New South Wales Branch, B.M.A.: Executive and Finance Committee.  
 JAN. 5.—New South Wales Branch, B.M.A.: Council (Quarterly).  
 JAN. 6.—Western Australian Branch, B.M.A.: Council.  
 JAN. 7.—South Australian Branch, B.M.A.: Council.  
 JAN. 8.—Queensland Branch, B.M.A.: Council.  
 JAN. 21.—Queensland Branch, B.M.A.: Clinical Meeting.  
 JAN. 22.—Queensland Branch, B.M.A.: Council.  
 JAN. 25.—Victorian Branch, B.M.A.: Council.  
 JAN. 27.—Federal Council, B.M.A.: Half-Yearly Meeting (Melbourne).

## Medical Appointments.

Dr. S. O. Cowen has been appointed Stewart Lecturer in Medicine in the University of Melbourne, Victoria.

Dr. W. A. D. V. Loftus has been appointed Government Medical Officer at Candelo, New South Wales.

Dr. K. S. Jones has been appointed Government Medical Officer at Pambula, New South Wales.

Dr. G. F. Bennett has been appointed, under the provisions of the *Workers' Compensation Act, 1928*, of Western Australia, a Certifying Medical Practitioner at Mirboo North, Western Australia.

Dr. L. A. Windsor-MacLean has been appointed, pursuant to the provisions of *The Workers' Compensation (Lead Poisoning, Mount Isa) Act of 1933*, of Queensland, Member and Chairman of the Medical Board constituted by that Act.

Dr. L. A. MacLean has been appointed Government Medical Officer for the purposes of *The Mine Workers' Relief Act, 1932*, of Western Australia.

## Medical Appointments Vacant, etc.

For announcements of medical appointments vacant, assistants, locum tenentes sought, etc., see "Advertiser", pages xvi to xviii.

CHILDREN'S HOSPITAL, CARLTON, VICTORIA: Medical Officers.  
 FREMANTLE HOSPITAL, FREMANTLE, WESTERN AUSTRALIA: Junior Resident Medical Officer.

IPSWICH HOSPITALS BOARD, IPSWICH, QUEENSLAND: Resident Medical Officer.

MANLY DISTRICT HOSPITAL, MANLY, NEW SOUTH WALES: Honorary Consultant Gynaecologist.

ROYAL AUSTRALIAN NAVY: Medical Officers.

SYDNEY HOSPITAL, SYDNEY, NEW SOUTH WALES: Honorary Officers, Senior Resident Medical Officer, Junior Resident Pathologist.

THE OTAGO HOSPITAL BOARD, DUNEDIN, NEW ZEALAND: Radio-therapist.

## Medical Appointments: Important Notice.

MEDICAL PRACTITIONERS are requested not to apply for any appointment referred to in the following table without having first communicated with the Honorary Secretary of the Branch named in the first column, or with the Medical Secretary of the British Medical Association, Tavistock Square, London, W.C.1.

BRANCHES.	APPOINTMENTS.
NEW SOUTH WALES: Honorary Secretary, 135, Macquarie Street, Sydney.	Australian Natives' Association. Ashfield and District United Friendly Societies' Dispensary. Balmain United Friendly Societies' Dispensary. Friendly Society Lodges at Casino. Leichhardt and Petersham United Friendly Societies' Dispensary. Manchester Unity Medical and Dispensing Institute, Oxford Street, Sydney. North Sydney Friendly Societies' Dispensary Limited. People's Prudential Assurance Company Limited. Phoenix Mutual Provident Society.
VICTORIAN: Honorary Secretary, Medical Society Hall, East Melbourne.	All Institutes or Medical Dispensaries. Australian Prudential Association, Proprietary, Limited. Mutual National Provident Club. National Provident Association. Hospital or other appointments outside Victoria.
QUEENSLAND: Honorary Secretary, B.M.A. Building, Adelaide Street, Brisbane.	Brisbane Associate Friendly Societies' Medical Institute. Proserpine District Hospital. Members accepting LODGE appointments and those desiring to accept appointments to any COUNTRY Hospital are advised, in their own interests, to submit a copy of their Agreement to the Council before signing.
SOUTH AUSTRALIAN: Secretary, 173, North Terrace, Adelaide.	All Lodge appointments in South Australia. All Contract Practice Appointments in South Australia.
WESTERN AUSTRALIAN: Honorary Secretary, 205, Saint George's Terrace, Perth.	All Contract Practice Appointments in Western Australia.

## Editorial Notices.

MANUSCRIPTS forwarded to the office of this journal cannot under any circumstances be returned. Original articles forwarded for publication are understood to be offered to THE MEDICAL JOURNAL OF AUSTRALIA alone, unless the contrary be stated.

All communications should be addressed to the Editor, THE MEDICAL JOURNAL OF AUSTRALIA, The Printing House, Seamer Street, Glebe, New South Wales. (Telephones: MW 2651-2.)

Members and subscribers are requested to notify the Manager, THE MEDICAL JOURNAL OF AUSTRALIA, Seamer Street, Glebe, New South Wales, without delay, of any irregularity in the delivery of this journal. The management cannot accept any responsibility or recognize any claim arising out of non-receipt of journals unless such a notification is received within one month.

SUBSCRIPTION RATES.—Medical students and others not receiving THE MEDICAL JOURNAL OF AUSTRALIA in virtue of membership of the Branches of the British Medical Association in the Commonwealth can become subscribers to the journal by applying to the Manager or through the usual agents and book-sellers. Subscriptions can commence at the beginning of any quarter and are renewable on December 31. The rates are £2 for Australia and £2 5s. abroad per annum payable in advance.